

Intermec Technologies Corporation

CN3 Long Keyboard

July 20, 2007

Report No. ITRM0160 Rev. 1

Report Prepared By



www.nwemc.com
1-888-EMI-CERT

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EMC Test Report

Certificate of Test
Issue Date: July 20, 2007
Intermec Technologies Corporation
Model: CN3 Long Keyboard

Emissions				
Test Description	Specification	Test Method	Pass	Fail
AC Powerline Conducted Emissions	FCC 15.207:2006	ANSI C63.4:2003	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Occupied Bandwidth	FCC 15.247 (DTS):2006	ANSI C63.4:2003 KDB No. 558074	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Output Power	FCC 15.247 (DTS):2006	ANSI C63.4:2003 KDB No. 558074	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Band Edge Compliance	FCC 15.247 (DTS):2006	ANSI C63.4:2003 KDB No. 558074	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Power Spectral Density	FCC 15.247 (DTS):2006	ANSI C63.4:2003 KDB No. 558074	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Spurious Conducted Emissions	FCC 15.247 (DTS):2006	ANSI C63.4:2003 KDB No. 558074	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Spurious Radiated Emissions	FCC 15.247 (DTS):2006	ANSI C63.4:2003 KDB No. 558074	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Modifications made to the product

See the Modifications section of this report

Test Facility

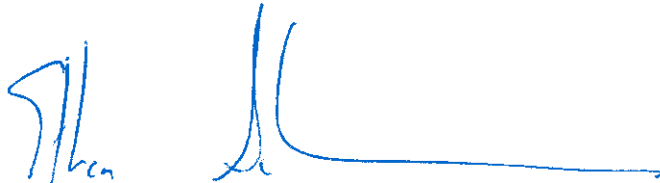
The measurement facility used to collect the data is located at:

Northwest EMC, Inc.
41 Tesla Avenue
Irvine, CA 92618

Phone: (949) 861-8918 Fax: 861-8923

This site has been fully described in a report filed with and accepted by the FCC (Federal Communications Commission) and Industry Canada.

Approved By:



Ethan Schoonover, Sultan Lab Manager

This report must not be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government of the United States of America.

Product compliance is the responsibility of the client, therefore the tests and equipment modes of operation represented in this report were agreed upon by the client, prior to testing. This Report may only be duplicated in its entirety. The results of this test pertain only to the sample(s) tested, the specific description is noted in each of the individual sections of the test report supporting this certificate of test.

Revision Number	Description	Date	Page Number
01	Changed the Output Power data	8-21-07	11, 12, 13, 14
01	Changed the model name to CN3 Long Keyboard	8-21-07	1, 2, 7, 8, 11, 12, 13, 14, 15, 16, 17, 18, 22, 23, 25, 27, 30, 41, 45, 53, 65

FCC: Accredited by NVLAP for performance of FCC radio, digital, and ISM device testing. Our Open Area Test Sites, certification chambers, and conducted measurement facilities have been fully described in reports filed with the FCC and accepted by the FCC in letters maintained in our files. Northwest EMC has been accredited by ANSI to ISO / IEC Guide 65 as a product certifier. We have been designated by the FCC as a Telecommunications Certification Body (TCB). This allows Northwest EMC to certify transmitters to FCC specifications in accordance with 47 CFR 2.960 and 2.962.



NVLAP: Northwest EMC, Inc. is accredited under the United States Department of Commerce, National Institute of Standards and Technology, and National Voluntary Laboratory Accreditation Program for satisfactory compliance with the requirements of ISO/IEC 17025 for Testing Laboratories. The NVLAP accreditation encompasses Electromagnetic Compatibility Testing in accordance with the European Union EMC Directive 2004/108/EC, and ANSI C63.4. Additionally, Northwest EMC is accredited by NVLAP to perform radio testing in accordance with the European Union R&TTE Directive 1999/5/EEC, the requirements of FCC, and the RSS radio standards for Industry Canada.



NVLAP LAB CODE 200629-0
 NVLAP LAB CODE 200630-0
 NVLAP LAB CODE 200676-0
 NVLAP LAB CODE 200761-0

Industry Canada: Accredited by NVLAP for performance of Industry Canada RSS and ICES testing. Our Open Area Test Sites and certification chambers comply with RSS 212, Issue 1 (Provisional) and have been filed with Industry Canada and accepted. Northwest EMC has been accredited by ANSI to ISO / IEC Guide 65 as a product certifier. We have been designated by NIST and recognized by Industry Canada as a Certification Body (CB) per the APEC Mutual Recognition Arrangement (MRA). This allows Northwest EMC to certify transmitters to Industry Canada technical requirements.



CAB: Designated by NIST and validated by the European Commission as a Conformity Assessment Body (CAB) to conduct tests and approve products to the EMC directive and transmitters to the R&TTE directive, as described in the U.S. - EU Mutual Recognition Agreement.



TÜV Product Service: Included in TÜV Product Service Group's Listing of Recognized Laboratories. It qualifies in connection with the TÜV Certification after Recognition of Agent's Testing Program for the product categories and/or standards shown in TÜV's current Listing of CARAT Laboratories, available from TÜV. A certificate was issued to represent that this laboratory continues to meet TÜV's CARAT Program requirements. Certificate No. USA0604C.



TÜV Rheinland: Authorized to carryout EMC tests by order and under supervision of TÜV Rheinland. This authorization is based on "Conditions for EMC-Subcontractors" of November 1992.



NEMKO: Assessed and accredited by NEMKO (Norwegian testing and certification body) for European emissions and immunity testing. As a result of NEMKO's laboratory assessment, they will accept test results from Northwest EMC, Inc. for product certification (Authorization No. ELA 119).



Australia/New Zealand: The National Association of Testing Authorities (NATA), Australia has been appointed by the ACA as an accreditation body to accredit test laboratories and competent bodies for EMC standards. Accredited test reports or assessments by competent bodies must carry the NATA logo. Test reports made by an overseas laboratory that has been accredited for the relevant standards by an overseas accreditation body that has a Mutual Recognition Agreement (MRA) with NATA are also accepted as technical grounds for product conformity. The report should be endorsed with the respective logo of the accreditation body (NVLAP).



VCCI: Accepted as an Associate Member to the VCCI, Acceptance No. 564. Conducted and radiated measurement facilities have been registered in accordance with Regulations for Voluntary Control Measures, Article 8. (*Registration Numbers. - Hillsboro: C-1071, R-1025, C-2687, T-289, and R-2318, Irvine: R-1943, C-2766, and T-298, Sultan: R-871, C-1784, and T-294.*)



BSMI: Northwest EMC has been designated by NIST and validated by C-Taipei (BSMI) as a CAB to conduct tests as described in the APEC Mutual Recognition Agreement. License No.SL2-IN-E-1017.



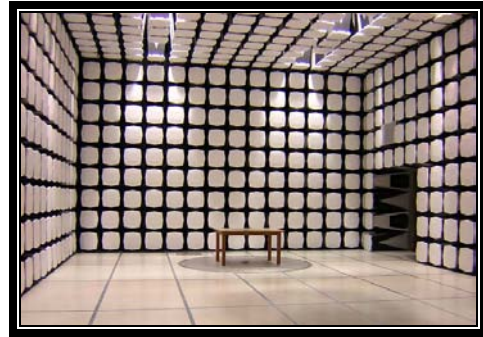
GOST: Northwest EMC, Inc. has been assessed and accredited by the Russian Certification bodies Certinform VNIINMASH, CERTINFO, SAMTES, and Federal CHEC, to perform EMC and Hygienic testing for Information Technology Products. As a result of their laboratory assessment, they will accept test results from Northwest EMC, Inc. for product certification



SCOPE

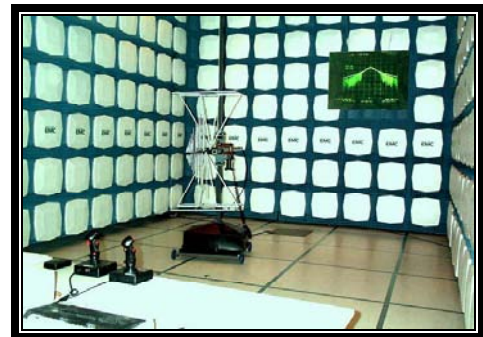
For details on the Scopes of our Accreditations, please visit:

<http://www.nwemc.com/scope.asp>



**California – Orange County Facility
Labs OC01 – OC13**

41 Tesla Ave. Irvine, CA 92618
(888) 364-2378 Fax: (503) 844-3826



**Oregon – Evergreen Facility
Labs EV01 – EV11**

22975 NW Evergreen Pkwy. Suite 400 Hillsboro, OR 97124
(503) 844-4066 Fax: (503) 844-3826



**Washington – Sultan Facility
Labs SU01 – SU07**

14128 339th Ave. SE Sultan, WA 98294
(888) 364-2378

Party Requesting the Test

Company Name:	Intermec Technologies Corporation
Address:	550 Second St. SE
City, State, Zip:	Cedar Rapids, IA 52401-2023
Test Requested By:	Scott Holub
Model:	CN3 Long Keyboard
First Date of Test:	6/19/2007
Last Date of Test:	July 16, 2007
Receipt Date of Samples:	June 19, 2007
Equipment Design Stage:	Production
Equipment Condition:	No Damage

Information Provided by the Party Requesting the Test

Functional Description of the EUT (Equipment Under Test):

802.11 radio in the host device CN3 Long Keyboard.

Testing Objective:

These tests were selected to satisfy FCC 15.247 requirements.

EUT Photo



CONFIGURATION 1 ITRM0160

Software/Firmware Running during test	
Description	Version
FCC Test Utility	1.01
BroadTest	1.0

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
CN3 Long Keyboard (Direct Connect)	Intermec Technologies Corporation	CN3 Long Keyboard	12090700022

Peripherals in test setup boundary			
Description	Manufacturer	Model/Part Number	Serial Number
DC Power Supply	Intermec Technologies Corporation	Model 0	557007

Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
DC Power Supply	No	1.8m	Yes	DC Power Supply	Stretch CN3
AC Power	No	1.8m	No	DC Power Supply	AC Mains
PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.					

CONFIGURATION 2 ITRM0160

Software/Firmware Running during test	
Description	Version
FCC Test Utility	1.01
BroadTest	1.0

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
CN3 Long Keyboard	Intermec Technologies Corporation	CN3 Long Keyboard	12090700027

Equipment modifications					
Item	Date	Test	Modification	Note	Disposition of EUT
1	6/19/2007	Radiated Spurious Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
2	6/20/2007	AC Power Line Conducted Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
3	6/21/2007	Power Spectral Density	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
4	6/21/2007	Band Edge Compliance	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
5	6/22/2007	Output Power	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
6	6/22/2007	Occupied Bandwidth	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
7	7/16/2007	Spurious Conducted Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	Scheduled testing was completed.

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

MODES OF OPERATION

Standby-Typical Use

TX Mode High. Channel 11, Highest Data Rate 54 Mbps

TX Mode Mid. Channel 6, Middle Data Rate 6 Mbps

TX Mode Low. Channel 1, Lowest Data Rate 1 Mbps

POWER SETTINGS INVESTIGATED

230V/50Hz

120V/60Hz

SAMPLE CALCULATIONS

Conducted Emissions: Adjusted Level = Measured Level + Transducer Factor + Cable Attenuation Factor + External Attenuator

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
LISN	Solar	9252-50-24-BNC	LIB	5/8/2006	16
OC11 cables a-b-e-f			OCM	1/8/2007	13
Receiver	Rohde & Schwartz	ESCI	ARF	12/14/2006	13

MEASUREMENT BANDWIDTHS

	Frequency Range (MHz)	Peak Data (kHz)	Quasi-Peak Data (kHz)	Average Data (kHz)
	0.01 - 0.15	1.0	0.2	0.2
	0.15 - 30.0	10.0	9.0	9.0
	30.0 - 1000	100.0	120.0	120.0
	Above 1000	1000.0	N/A	1000.0

Measurements were made using the bandwidths and detectors specified. No video filter was used.

MEASUREMENT UNCERTAINTY


Measurement uncertainty is used to reflect the accuracy of the measured result as compared with its "true" or theoretically correct value. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4. In the case of transient tests our test equipment has been demonstrated by calibration to provide at least a 95% confidence that it complies with the test specification requirements. The measurement uncertainty for any test is available upon request.

TEST DESCRIPTION

Using the mode of operation and configuration noted within this report, conducted emissions tests were performed. The frequency range investigated (scanned), is also noted in this report. Conducted power line measurements are made, unless otherwise specified, over the frequency range from 150 kHz to 30 MHz to determine the line-to-ground radio-noise voltage that is conducted from the EUT power-input terminals that are directly (or indirectly via separate transformer or power supplies) connected to a public power network. Equipment is tested with power cords that are normally used or that have electrical or shielding characteristics that are the same as those cords normally used. Typically those measurements are made using a LISN (Line Impedance Stabilization Network), the 50 Ω measuring port is terminated by a 50 Ω EMI meter or a 50 Ω resistive load. All 50 Ω measuring ports of the LISN are terminated by 50 Ω .

EMC

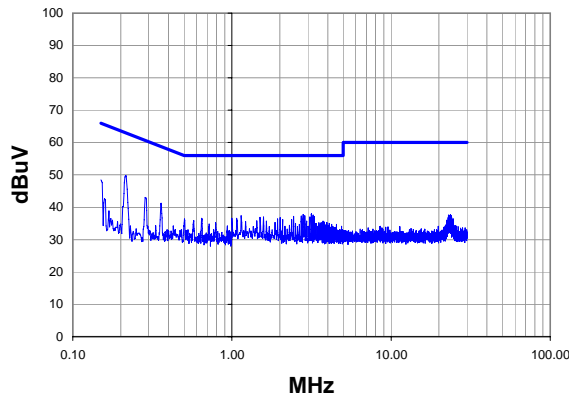
CONDUCTED EMISSIONS

Work Order:	ITRM0160	Date:	06/20/07	
Project:	None	Temperature:	22°C	
Job Site:	OC06	Humidity:	42	
Serial Number:	12090700027	Barometric Pres.:	29.98	
EUT:	CN3 Long Keyboard			
Configuration:	1			
Customer:	Intermec Technologies Corporation			
Attendees:	None			
EUT Power:	120V/60Hz			
Operating Mode:	TX Mode Low. Channel 1, Lowest Data Rate 1 Mbps			
Deviations:	No Deviations			
Comments:	802.11 Mode			

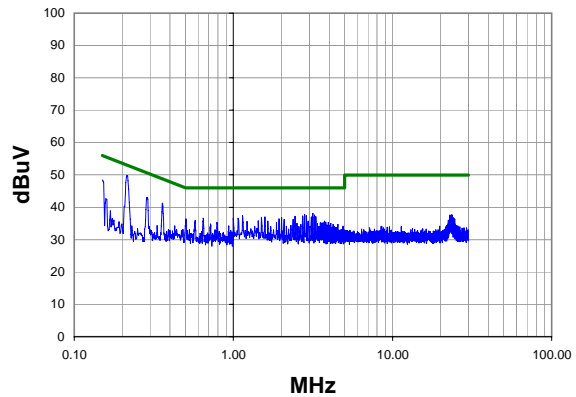
Test Specifications FCC 15.207:2006	Test Method ANSI C63.4:2003
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Run #	7	Line:	High Line	Ext. Attenuation:	20	Results	Pass
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Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



Peak Data - vs - Quasi Peak Limit


Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted	Spec. Limit	Compared to Spec. (dB)
0.215	28.5	1.3	49.8	63.0	-13.2
0.150	26.2	2.3	48.5	66.0	-17.5
0.359	20.1	1.1	41.2	58.7	-17.5
0.284	21.9	1.1	43.0	60.7	-17.6
3.160	17.3	0.8	38.1	56.0	-17.9
2.800	17.0	0.8	37.8	56.0	-18.2
3.232	16.8	0.8	37.6	56.0	-18.4
1.144	16.7	0.7	37.4	56.0	-18.6
2.872	16.6	0.8	37.4	56.0	-18.6
2.728	16.5	0.8	37.3	56.0	-18.7
2.440	16.4	0.8	37.2	56.0	-18.8
3.304	16.3	0.8	37.1	56.0	-18.9
1.576	16.3	0.7	37.0	56.0	-19.0
3.088	16.2	0.8	37.0	56.0	-19.0
1.504	16.2	0.7	36.9	56.0	-19.1
2.008	16.1	0.7	36.8	56.0	-19.2
0.646	15.8	0.8	36.6	56.0	-19.4
1.000	15.9	0.7	36.6	56.0	-19.4
1.072	15.9	0.7	36.6	56.0	-19.4
0.504	15.5	0.9	36.4	56.0	-19.6

Peak Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted	Spec. Limit	Compared to Spec. (dB)
0.215	28.5	1.3	49.8	53.0	-3.2
0.150	26.2	2.3	48.5	56.0	-7.5
0.359	20.1	1.1	41.2	48.7	-7.5
0.284	21.9	1.1	43.0	50.7	-7.6
3.160	17.3	0.8	38.1	46.0	-7.9
2.800	17.0	0.8	37.8	46.0	-8.2
3.232	16.8	0.8	37.6	46.0	-8.4
1.144	16.7	0.7	37.4	46.0	-8.6
2.872	16.6	0.8	37.4	46.0	-8.6
2.728	16.5	0.8	37.3	46.0	-8.7
2.440	16.4	0.8	37.2	46.0	-8.8
3.304	16.3	0.8	37.1	46.0	-8.9
1.576	16.3	0.7	37.0	46.0	-9.0
3.088	16.2	0.8	37.0	46.0	-9.0
1.504	16.2	0.7	36.9	46.0	-9.1
2.008	16.1	0.7	36.8	46.0	-9.2
0.646	15.8	0.8	36.6	46.0	-9.4
1.000	15.9	0.7	36.6	46.0	-9.4
1.072	15.9	0.7	36.6	46.0	-9.4
0.504	15.5	0.9	36.4	46.0	-9.6

EMC

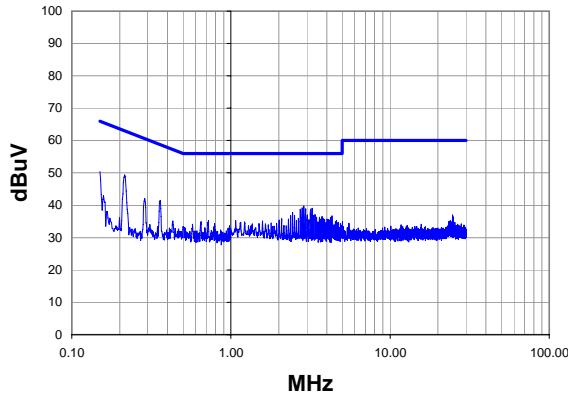
CONDUCTED EMISSIONS

Work Order:	ITRM0160	Date:	06/20/07	
Project:	None	Temperature:	22°C	
Job Site:	OC06	Humidity:	42	
Serial Number:	12090700027	Barometric Pres.:	29.98	
EUT:	CN3 Long Keyboard			
Configuration:	1			
Customer:	Intermec Technologies Corporation			
Attendees:	None			
EUT Power:	120V/60Hz			
Operating Mode:	TX Mode Low. Channel 1, Lowest Data Rate 1 Mbps			
Deviations:	No Deviations			
Comments:	802.11 Mode			

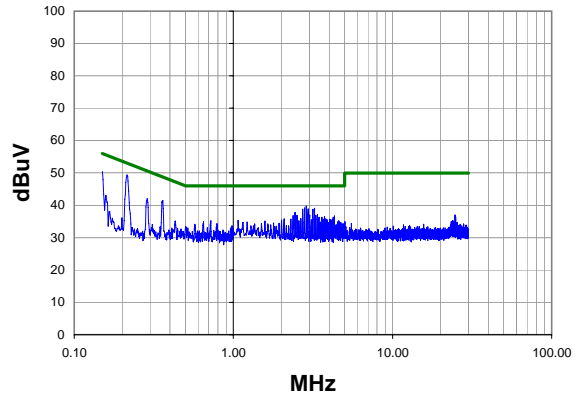
Test Specifications FCC 15.207:2006	Test Method ANSI C63.4:2003
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Run #	8	Line:	Neutral	Ext. Attenuation:	20	Results	Pass
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Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



Peak Data - vs - Quasi Peak Limit


Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted	Spec. Limit	Compared to Spec. (dB)
0.215	28.0	1.3	49.3	63.0	-13.7
0.150	28.1	2.3	50.4	66.0	-15.6
2.872	19.0	0.8	39.8	56.0	-16.2
2.800	18.4	0.8	39.2	56.0	-16.8
3.232	18.3	0.8	39.1	56.0	-16.9
2.944	18.1	0.8	38.9	56.0	-17.1
2.728	18.0	0.8	38.8	56.0	-17.2
3.160	18.0	0.8	38.8	56.0	-17.2
0.359	20.3	1.1	41.4	58.7	-17.3
2.440	17.0	0.8	37.8	56.0	-18.2
0.288	20.9	1.1	42.0	60.6	-18.5
3.376	16.3	0.8	37.1	56.0	-18.9
3.016	16.2	0.8	37.0	56.0	-19.0
2.512	16.1	0.8	36.9	56.0	-19.1
3.304	16.1	0.8	36.9	56.0	-19.1
2.368	16.0	0.8	36.8	56.0	-19.2
4.312	15.9	0.8	36.7	56.0	-19.3
3.736	15.7	0.8	36.5	56.0	-19.5
3.448	15.5	0.8	36.3	56.0	-19.7
3.592	15.5	0.8	36.3	56.0	-19.7

Peak Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted	Spec. Limit	Compared to Spec. (dB)
0.215	28.0	1.3	49.3	53.0	-3.7
0.150	28.1	2.3	50.4	56.0	-5.6
2.872	19.0	0.8	39.8	46.0	-6.2
2.800	18.4	0.8	39.2	46.0	-6.8
3.232	18.3	0.8	39.1	46.0	-6.9
2.944	18.1	0.8	38.9	46.0	-7.1
2.728	18.0	0.8	38.8	46.0	-7.2
3.160	18.0	0.8	38.8	46.0	-7.2
0.359	20.3	1.1	41.4	48.7	-7.3
2.440	17.0	0.8	37.8	46.0	-8.2
0.288	20.9	1.1	42.0	50.6	-8.5
3.376	16.3	0.8	37.1	46.0	-8.9
3.016	16.2	0.8	37.0	46.0	-9.0
2.512	16.1	0.8	36.9	46.0	-9.1
3.304	16.1	0.8	36.9	46.0	-9.1
2.368	16.0	0.8	36.8	46.0	-9.2
4.312	15.9	0.8	36.7	46.0	-9.3
3.736	15.7	0.8	36.5	46.0	-9.5
3.448	15.5	0.8	36.3	46.0	-9.7
3.592	15.5	0.8	36.3	46.0	-9.7

EMC

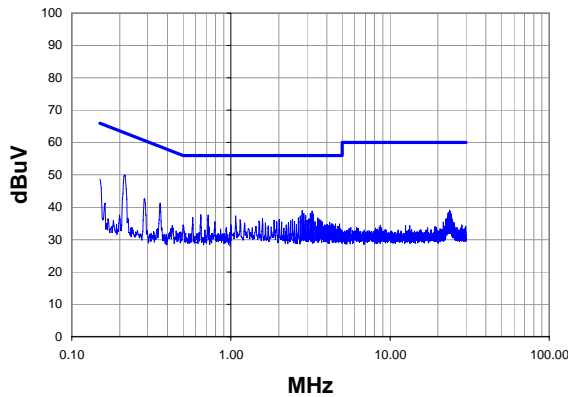
CONDUCTED EMISSIONS

Work Order:	ITRM0160	Date:	06/20/07	
Project:	None	Temperature:	22°C	
Job Site:	OC06	Humidity:	42	
Serial Number:	12090700027	Barometric Pres.:	29.98	
EUT:	CN3 Long Keyboard			
Configuration:	1			
Customer:	Intermec Technologies Corporation			
Attendees:	None			
EUT Power:	120V/60Hz			
Operating Mode:	TX Mode Mid. Channel 6, Middle Data Rate 6 Mbps			
Deviations:	No Deviations			
Comments:	802.11 Mode			

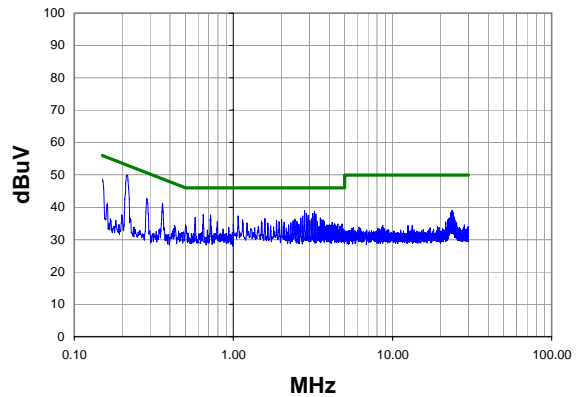
Test Specifications FCC 15.207:2006	Test Method ANSI C63.4:2003
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Run #	9	Line:	High Line	Ext. Attenuation:	20	Results	Pass
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Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



Peak Data - vs - Quasi Peak Limit


Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted	Spec. Limit	Compared to Spec. (dB)
0.215	28.6	1.3	49.9	63.0	-13.1
2.800	18.2	0.8	39.0	56.0	-17.0
3.232	18.0	0.8	38.8	56.0	-17.2
0.150	26.4	2.3	48.7	66.0	-17.3
0.359	20.1	1.1	41.2	58.7	-17.5
2.872	17.3	0.8	38.1	56.0	-17.9
3.160	17.3	0.8	38.1	56.0	-17.9
0.286	21.5	1.1	42.6	60.6	-18.0
3.304	17.1	0.8	37.9	56.0	-18.1
0.646	16.9	0.8	37.7	56.0	-18.3
0.719	16.8	0.8	37.6	56.0	-18.4
2.944	16.7	0.8	37.5	56.0	-18.5
1.072	16.6	0.7	37.3	56.0	-18.7
2.728	16.5	0.8	37.3	56.0	-18.7
0.577	15.9	0.9	36.8	56.0	-19.2
2.656	15.9	0.8	36.7	56.0	-19.3
3.520	15.9	0.8	36.7	56.0	-19.3
1.576	15.8	0.7	36.5	56.0	-19.5
3.088	15.6	0.8	36.4	56.0	-19.6
2.440	15.5	0.8	36.3	56.0	-19.7

Peak Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted	Spec. Limit	Compared to Spec. (dB)
0.215	28.6	1.3	49.9	53.0	-3.1
2.800	18.2	0.8	39.0	46.0	-7.0
3.232	18.0	0.8	38.8	46.0	-7.2
0.150	26.4	2.3	48.7	56.0	-7.3
0.359	20.1	1.1	41.2	48.7	-7.5
2.872	17.3	0.8	38.1	46.0	-7.9
3.160	17.3	0.8	38.1	46.0	-7.9
0.286	21.5	1.1	42.6	50.6	-8.0
3.304	17.1	0.8	37.9	46.0	-8.1
0.646	16.9	0.8	37.7	46.0	-8.3
0.719	16.8	0.8	37.6	46.0	-8.4
2.944	16.7	0.8	37.5	46.0	-8.5
1.072	16.6	0.7	37.3	46.0	-8.7
2.728	16.5	0.8	37.3	46.0	-8.7
0.577	15.9	0.9	36.8	46.0	-9.2
2.656	15.9	0.8	36.7	46.0	-9.3
3.520	15.9	0.8	36.7	46.0	-9.3
1.576	15.8	0.7	36.5	46.0	-9.5
3.088	15.6	0.8	36.4	46.0	-9.6
2.440	15.5	0.8	36.3	46.0	-9.7

EMC

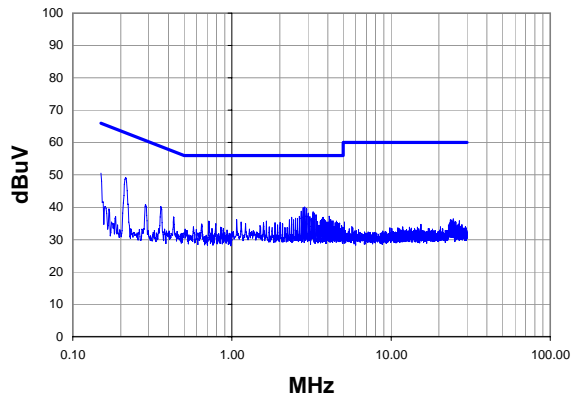
CONDUCTED EMISSIONS

Work Order:	ITRM0160	Date:	06/20/07	
Project:	None	Temperature:	22°C	
Job Site:	OC06	Humidity:	42	
Serial Number:	12090700027	Barometric Pres.:	29.98	
EUT:	CN3 Long Keyboard			
Configuration:	1			
Customer:	Intermec Technologies Corporation			
Attendees:	None			
EUT Power:	120V/60Hz			
Operating Mode:	TX Mode Mid. Channel 6, Middle Data Rate 6 Mbps			
Deviations:	No Deviations			
Comments:	802.11 Mode			

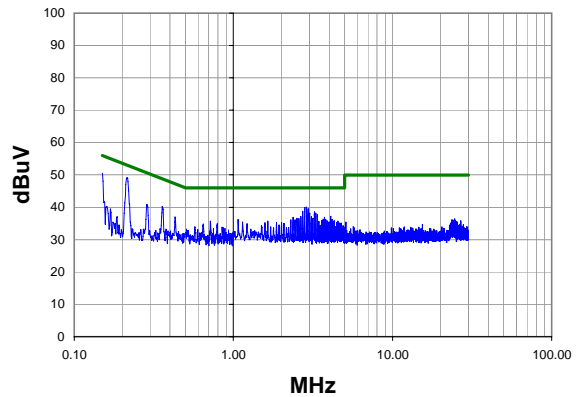
Test Specifications FCC 15.207:2006	Test Method ANSI C63.4:2003
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Run #	10	Line:	Neutral	Ext. Attenuation:	20	Results	Pass
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Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



Peak Data - vs - Quasi Peak Limit


Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted	Spec. Limit	Compared to Spec. (dB)
0.215	27.8	1.3	49.1	63.0	-13.9
0.150	28.2	2.3	50.5	66.0	-15.5
2.872	19.3	0.8	40.1	56.0	-15.9
2.800	19.1	0.8	39.9	56.0	-16.1
2.944	18.8	0.8	39.6	56.0	-16.4
2.728	18.0	0.8	38.8	56.0	-17.2
3.232	17.8	0.8	38.6	56.0	-17.4
3.016	17.4	0.8	38.2	56.0	-17.8
3.304	17.4	0.8	38.2	56.0	-17.8
3.376	16.9	0.8	37.7	56.0	-18.3
0.357	19.2	1.1	40.3	58.8	-18.5
2.656	16.4	0.8	37.2	56.0	-18.8
4.088	16.4	0.8	37.2	56.0	-18.8
3.088	16.3	0.8	37.1	56.0	-18.9
3.736	16.1	0.8	36.9	56.0	-19.1
2.368	16.1	0.8	36.9	56.0	-19.1
2.512	15.8	0.8	36.6	56.0	-19.4
3.160	15.8	0.8	36.6	56.0	-19.4
2.584	15.7	0.8	36.5	56.0	-19.5
3.664	15.5	0.8	36.3	56.0	-19.7

Peak Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted	Spec. Limit	Compared to Spec. (dB)
0.215	27.8	1.3	49.1	53.0	-3.9
0.150	28.2	2.3	50.5	56.0	-5.5
2.872	19.3	0.8	40.1	46.0	-5.9
2.800	19.1	0.8	39.9	46.0	-6.1
2.944	18.8	0.8	39.6	46.0	-6.4
2.728	18.0	0.8	38.8	46.0	-7.2
3.232	17.8	0.8	38.6	46.0	-7.4
3.016	17.4	0.8	38.2	46.0	-7.8
3.304	17.4	0.8	38.2	46.0	-7.8
3.376	16.9	0.8	37.7	46.0	-8.3
0.357	19.2	1.1	40.3	48.8	-8.5
2.656	16.4	0.8	37.2	46.0	-8.8
4.088	16.4	0.8	37.2	46.0	-8.8
3.088	16.3	0.8	37.1	46.0	-8.9
3.736	16.1	0.8	36.9	46.0	-9.1
2.368	16.1	0.8	36.9	46.0	-9.1
2.512	15.8	0.8	36.6	46.0	-9.4
3.160	15.8	0.8	36.6	46.0	-9.4
2.584	15.7	0.8	36.5	46.0	-9.5
3.664	15.5	0.8	36.3	46.0	-9.7

EMC

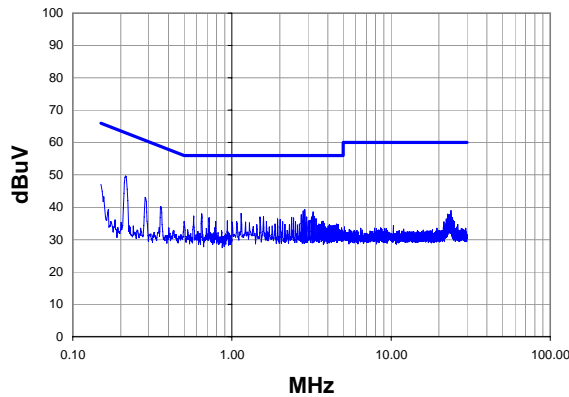
CONDUCTED EMISSIONS

Work Order:	ITRM0160	Date:	06/20/07	
Project:	None	Temperature:	22°C	
Job Site:	OC06	Humidity:	42	
Serial Number:	12090700027	Barometric Pres.:	29.98	
EUT:	CN3 Long Keyboard			
Configuration:	1			
Customer:	Intermec Technologies Corporation			
Attendees:	None			
EUT Power:	120V/60Hz			
Operating Mode:	TX Mode High. Channel 11, Highest Data Rate 54 Mbps			
Deviations:	No Deviations			
Comments:	802.11 Mode			

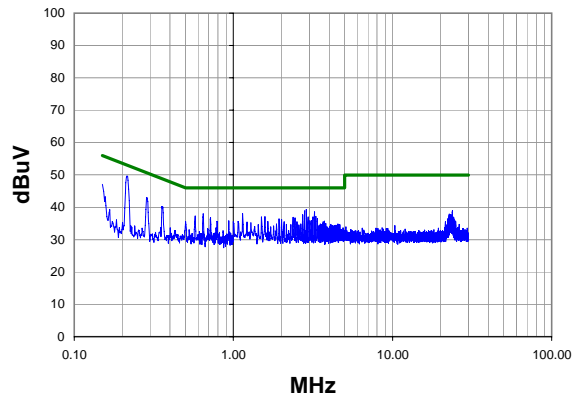
Test Specifications FCC 15.207:2006	Test Method ANSI C63.4:2003
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Run #	11	Line:	High Line	Ext. Attenuation:	20	Results	Pass
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Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



Peak Data - vs - Quasi Peak Limit


Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted	Spec. Limit	Compared to Spec. (dB)
0.215	28.3	1.3	49.6	63.0	-13.4
2.872	18.5	0.8	39.3	56.0	-16.7
2.800	18.1	0.8	38.9	56.0	-17.1
3.232	17.8	0.8	38.6	56.0	-17.4
0.284	21.9	1.1	43.0	60.7	-17.6
1.144	17.4	0.7	38.1	56.0	-17.9
0.646	17.2	0.8	38.0	56.0	-18.0
2.728	16.9	0.8	37.7	56.0	-18.3
0.356	19.2	1.1	40.3	58.8	-18.5
0.575	16.4	0.9	37.3	56.0	-18.7
3.304	16.4	0.8	37.2	56.0	-18.8
0.150	24.8	2.3	47.1	66.0	-18.9
1.576	16.4	0.7	37.1	56.0	-18.9
1.504	16.3	0.7	37.0	56.0	-19.0
2.944	16.2	0.8	37.0	56.0	-19.0
3.160	16.2	0.8	37.0	56.0	-19.0
2.368	16.1	0.8	36.9	56.0	-19.1
0.718	16.0	0.8	36.8	56.0	-19.2
2.440	15.9	0.8	36.7	56.0	-19.3
3.376	15.7	0.8	36.5	56.0	-19.5

Peak Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted	Spec. Limit	Compared to Spec. (dB)
0.215	28.3	1.3	49.6	53.0	-3.4
2.872	18.5	0.8	39.3	46.0	-6.7
2.800	18.1	0.8	38.9	46.0	-7.1
3.232	17.8	0.8	38.6	46.0	-7.4
0.284	21.9	1.1	43.0	50.7	-7.6
1.144	17.4	0.7	38.1	46.0	-7.9
0.646	17.2	0.8	38.0	46.0	-8.0
2.728	16.9	0.8	37.7	46.0	-8.3
0.356	19.2	1.1	40.3	48.8	-8.5
0.575	16.4	0.9	37.3	46.0	-8.7
3.304	16.4	0.8	37.2	46.0	-8.8
0.150	24.8	2.3	47.1	56.0	-8.9
1.576	16.4	0.7	37.1	46.0	-8.9
1.504	16.3	0.7	37.0	46.0	-9.0
2.944	16.2	0.8	37.0	46.0	-9.0
3.160	16.2	0.8	37.0	46.0	-9.0
2.368	16.1	0.8	36.9	46.0	-9.1
0.718	16.0	0.8	36.8	46.0	-9.2
2.440	15.9	0.8	36.7	46.0	-9.3
3.376	15.7	0.8	36.5	46.0	-9.5

EMC

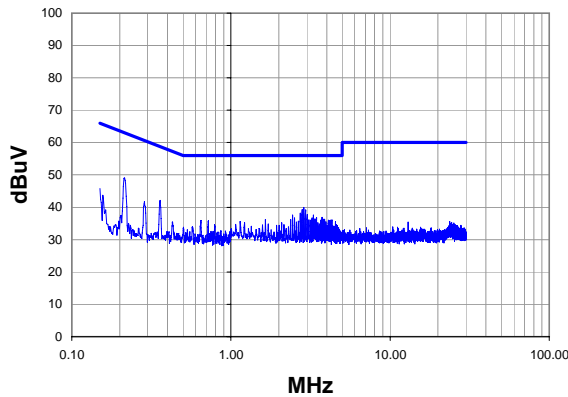
CONDUCTED EMISSIONS

Work Order:	ITRM0160	Date:	06/20/07	
Project:	None	Temperature:	22°C	
Job Site:	OC06	Humidity:	42	
Serial Number:	12090700027	Barometric Pres.:	29.98	
EUT:	CN3 Long Keyboard			
Configuration:	1			
Customer:	Intermec Technologies Corporation			
Attendees:	None			
EUT Power:	120V/60Hz			
Operating Mode:	TX Mode High. Channel 11, Highest Data Rate 54 Mbps			
Deviations:	No Deviations			
Comments:	802.11 Mode			

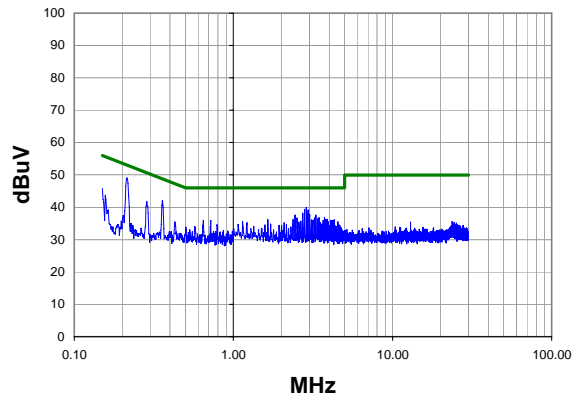
Test Specifications FCC 15.207:2006	Test Method ANSI C63.4:2003
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Run #	12	Line:	Neutral	Ext. Attenuation:	20	Results	Pass
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Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



Peak Data - vs - Quasi Peak Limit


Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted	Spec. Limit	Compared to Spec. (dB)
0.215	27.7	1.3	49.0	63.0	-14.0
2.872	19.2	0.8	40.0	56.0	-16.0
0.359	21.0	1.1	42.1	58.7	-16.6
2.800	18.5	0.8	39.3	56.0	-16.7
2.944	18.4	0.8	39.2	56.0	-16.8
2.728	17.4	0.8	38.2	56.0	-17.8
3.016	17.0	0.8	37.8	56.0	-18.2
2.440	16.8	0.8	37.6	56.0	-18.4
3.304	16.8	0.8	37.6	56.0	-18.4
0.286	20.6	1.1	41.7	60.6	-18.9
3.736	16.1	0.8	36.9	56.0	-19.1
3.448	16.0	0.8	36.8	56.0	-19.2
2.512	15.9	0.8	36.7	56.0	-19.3
3.232	15.9	0.8	36.7	56.0	-19.3
3.376	15.6	0.8	36.4	56.0	-19.6
3.808	15.5	0.8	36.3	56.0	-19.7
3.880	15.5	0.8	36.3	56.0	-19.7
1.648	15.5	0.7	36.2	56.0	-19.8
2.368	15.4	0.8	36.2	56.0	-19.8
3.088	15.3	0.8	36.1	56.0	-19.9

Peak Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted	Spec. Limit	Compared to Spec. (dB)
0.215	27.7	1.3	49.0	53.0	-4.0
2.872	19.2	0.8	40.0	46.0	-6.0
0.359	21.0	1.1	42.1	48.7	-6.6
2.800	18.5	0.8	39.3	46.0	-6.7
2.944	18.4	0.8	39.2	46.0	-6.8
2.728	17.4	0.8	38.2	46.0	-7.8
3.016	17.0	0.8	37.8	46.0	-8.2
2.440	16.8	0.8	37.6	46.0	-8.4
3.304	16.8	0.8	37.6	46.0	-8.4
0.286	20.6	1.1	41.7	50.6	-8.9
3.736	16.1	0.8	36.9	46.0	-9.1
3.448	16.0	0.8	36.8	46.0	-9.2
2.512	15.9	0.8	36.7	46.0	-9.3
3.232	15.9	0.8	36.7	46.0	-9.3
3.376	15.6	0.8	36.4	46.0	-9.6
3.808	15.5	0.8	36.3	46.0	-9.7
3.880	15.5	0.8	36.3	46.0	-9.7
1.648	15.5	0.7	36.2	46.0	-9.8
2.368	15.4	0.8	36.2	46.0	-9.8
3.088	15.3	0.8	36.1	46.0	-9.9

EMC

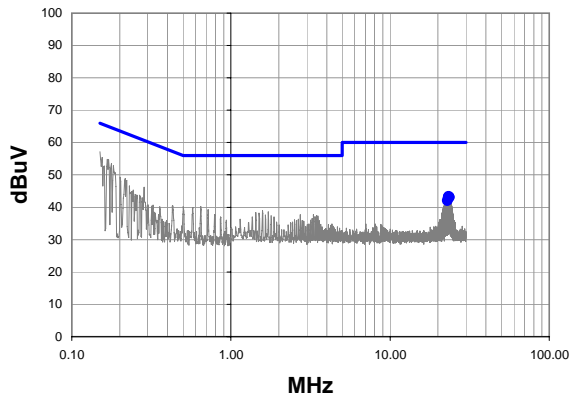
CONDUCTED EMISSIONS

Work Order:	ITRM0160	Date:	06/20/07	
Project:	None	Temperature:	22°C	
Job Site:	OC06	Humidity:	42	
Serial Number:	12090700027	Barometric Pres.:	29.98	
EUT:	CN3 Long Keyboard			
Configuration:	1			
Customer:	Intermec Technologies Corporation			
Attendees:	None			
EUT Power:	230V/50Hz			
Operating Mode:	Standby-Typical Use			
Deviations:	No Deviations			
Comments:	802.11 Mode			

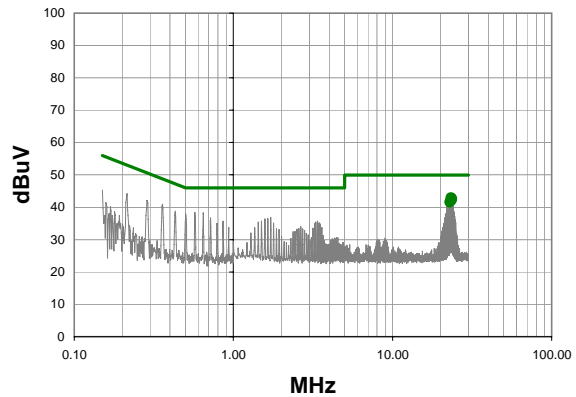
Test Specifications FCC 15.207:2006	Test Method ANSI C63.4:2003
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Run #	17	Line:	High Line	Ext. Attenuation:	20	Results	Pass
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Quasi Peak Data - vs - Quasi Peak Limit



Average Data - vs - Average Limit



Quasi Peak Data - vs - Quasi Peak Limit


Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted	Spec. Limit	Compared to Spec. (dB)
23.406	22.1	1.3	43.4	60.0	-16.6
23.480	21.9	1.3	43.2	60.0	-16.8
23.550	21.8	1.3	43.1	60.0	-16.9
23.264	21.8	1.3	43.1	60.0	-16.9
23.336	21.8	1.3	43.1	60.0	-16.9
22.904	20.8	1.3	42.1	60.0	-17.9

Average Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted	Spec. Limit	Compared to Spec. (dB)
23.406	21.7	1.3	43.0	50.0	-7.0
23.550	21.4	1.3	42.7	50.0	-7.3
23.264	21.0	1.3	42.3	50.0	-7.7
23.480	20.9	1.3	42.2	50.0	-7.8
23.336	20.9	1.3	42.2	50.0	-7.8
22.904	20.3	1.3	41.6	50.0	-8.4

EMC

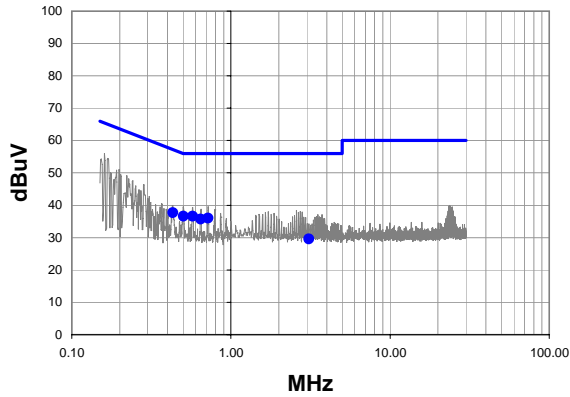
CONDUCTED EMISSIONS

Work Order:	ITRM0160	Date:	06/20/07	
Project:	None	Temperature:	22°C	
Job Site:	OC06	Humidity:	42	
Serial Number:	12090700027	Barometric Pres.:	29.98	
EUT:	CN3 Long Keyboard			
Configuration:	1			
Customer:	Intermec Technologies Corporation			
Attendees:	None			
EUT Power:	230V/50Hz			
Operating Mode:	Standby-Typical Use			
Deviations:	No Deviations			
Comments:	802.11 Mode			

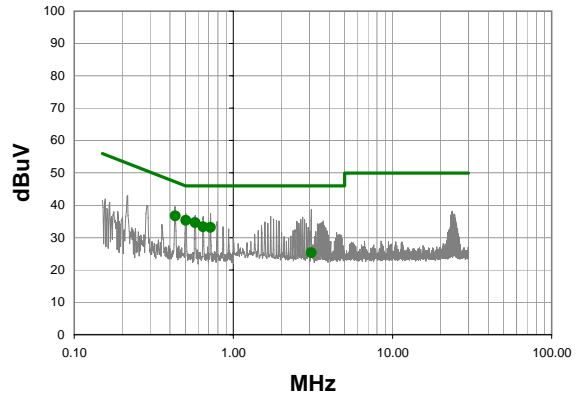
Test Specifications FCC 15.207:2006	Test Method ANSI C63.4:2003
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Run #	16	Line:	Neutral	Ext. Attenuation:	20	Results	Pass
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Quasi Peak Data - vs - Quasi Peak Limit



Average Data - vs - Average Limit

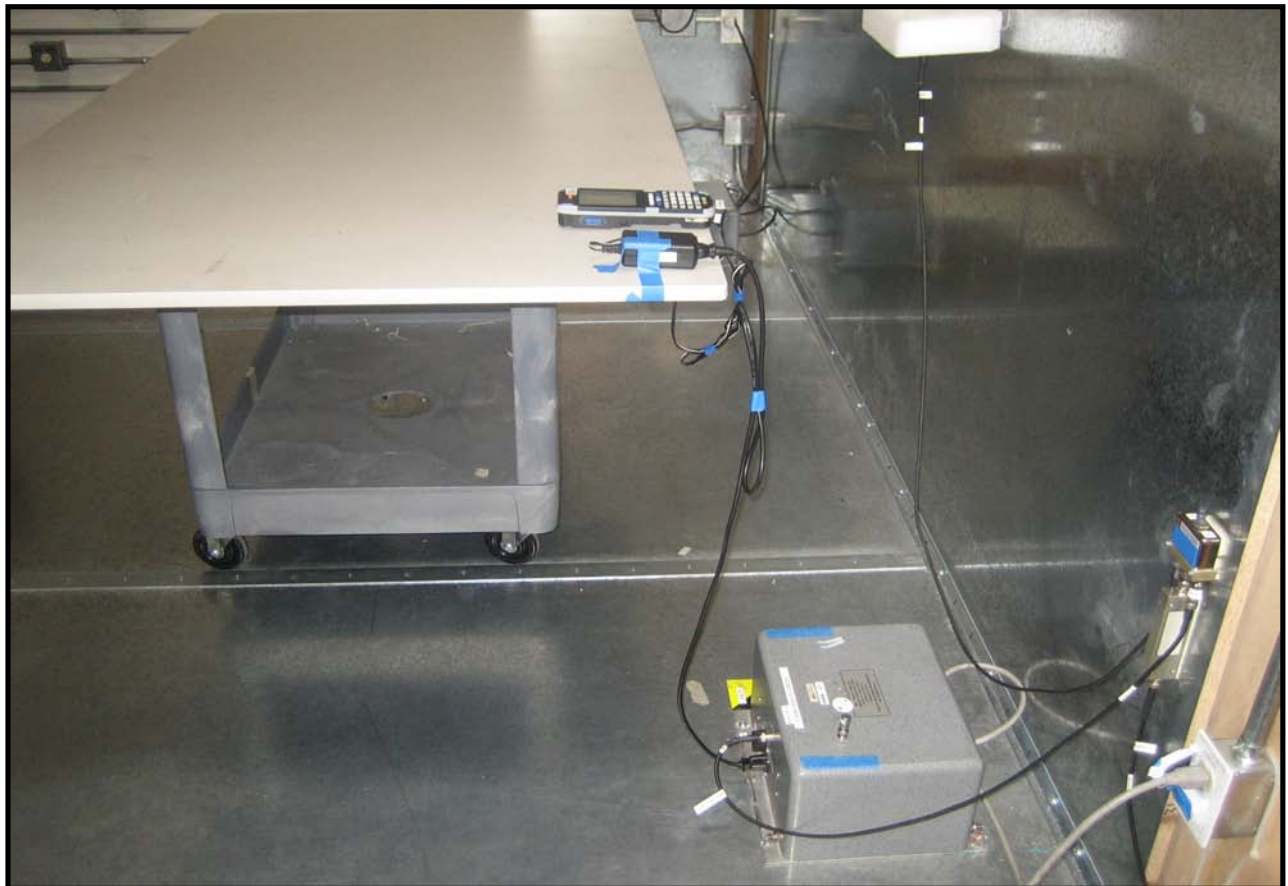


Quasi Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted	Spec. Limit	Compared to Spec. (dB)
0.504	15.7	0.9	36.6	56.0	-19.4
0.575	15.7	0.9	36.6	56.0	-19.4
0.431	16.6	1.1	37.7	57.2	-19.6
0.718	15.2	0.8	36.0	56.0	-20.0
0.645	14.9	0.8	35.7	56.0	-20.3
3.088	8.8	0.8	29.6	56.0	-26.4

Average Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted	Spec. Limit	Compared to Spec. (dB)
0.431	15.6	1.1	36.7	47.2	-10.6
0.504	14.4	0.9	35.3	46.0	-10.7
0.575	13.8	0.9	34.7	46.0	-11.3
0.645	12.5	0.8	33.3	46.0	-12.7
0.718	12.3	0.8	33.1	46.0	-12.9
3.088	4.5	0.8	25.3	46.0	-20.7





Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

MODES OF OPERATION INVESTIGATED

802.11 Mode, Channel 1
802.11 Mode, Channel 6
802.11 Mode, Channel 11

DATA RATES INVESTIGATED

1 MbpS
6 MbpS
11 MbpS
36 MbpS
54 MbpS

POWER SETTINGS INVESTIGATED

Battery

POWER SETTINGS USED FOR FINAL DATA

Battery

FREQUENCY RANGE INVESTIGATED

Start Frequency	30 MHz	Stop Frequency	26 GHz
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SAMPLE CALCULATIONS

Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Pre-Amplifier	Miteq	AMF-6F-18002650-25-10P	AOI	7/11/2006	13
Antenna, Horn	EMCO	3160-09	AHN	NCR	0
OC10 SMA cable for 18-26 GHz			OCK	7/11/2006	13
High Pass Filter	Micro-Tronics	HPM50111	HFM	12/17/2006	13
Pre-Amplifier	Miteq	AMF-6F-12001800-30-10P	AOF	10/13/2006	12
Antenna, Horn	ETS	3160-08	AHT	NCR	0
Pre-Amplifier	Miteq	AMF-6F-08001200-30-10P	AOE	10/13/2006	12
Antenna, Horn	ETS	3160-07	AHR	NCR	24
OC10 cables a,b,c,e,f Horn Cables			OCJ	1/14/2007	13
Pre-Amplifier	Miteq	AMF-4D-010120-30-10P-1	AOP	1/14/2007	13
Antenna, Horn	EMCO	3115	AHB	8/1/2005	24
OC 10 Cables a, b, c, l Cables			OCO	1/14/2007	13
Antenna, Biconilog	EMCO	3142	AXJ	3/14/2006	24
OC10 cables a,b,c,d Bilog			OCH	12/17/2006	13
Pre-Amplifier	Miteq	AM-1616-1000	AOM	12/17/2006	13
Spectrum Analyzer	Agilent	E4446A	AAQ	1/18/2007	13

MEASUREMENT BANDWIDTHS

Frequency Range (MHz)	Peak Data	Quasi-Peak Data	Average Data
	(kHz)	(kHz)	(kHz)
0.01 - 0.15	1.0	0.2	0.2
0.15 - 30.0	10.0	9.0	9.0
30.0 - 1000	100.0	120.0	120.0
Above 1000	1000.0	N/A	1000.0

Measurements were made using the bandwidths and detectors specified. No video filter was used.

MEASUREMENT UNCERTAINTY

Measurement uncertainty is used to reflect the accuracy of the measured result as compared with its "true" or theoretically correct value. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4. In the case of transient tests our test equipment has been demonstrated by calibration to provide at least a 95% confidence that it complies with the test specification requirements. The measurement uncertainty for any test is available upon request.

TEST DESCRIPTION

The highest gain of each type of antenna to be used with the EUT was tested. The EUT was configured for low, mid, and high band transmit frequencies. For each configuration, the spectrum was scanned throughout the specified range. In addition, measurements were made in the restricted bands to verify compliance. While scanning, emissions from the EUT were maximized by rotating the EUT on a turntable, adjusting the position of the EUT and the EUT antenna in three orthogonal axis, and adjusting measurement antenna height and polarization, and manipulating the EUT antenna in 3 orthogonal planes (per ANSI C63.4:2003). A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

RADIATED EMISSIONS DATA SHEET

EUT: CN3 Long Keyboard	Work Order: ITRM0160
Serial Number: 12090700027	Date: 06/19/07
Customer: Intermec Technologies Corporation	Temperature: 22°C
Attendees: None	Humidity: 42%
Project: None	Barometric Pres.: 29.98
Tested by: Jaemi Suh	Power: Battery
	Job Site: OC13

TEST SPECIFICATIONS	Test Method
FCC 15.247 (DTS):2006	ANSI C63.4:2003 KDB No. 558074

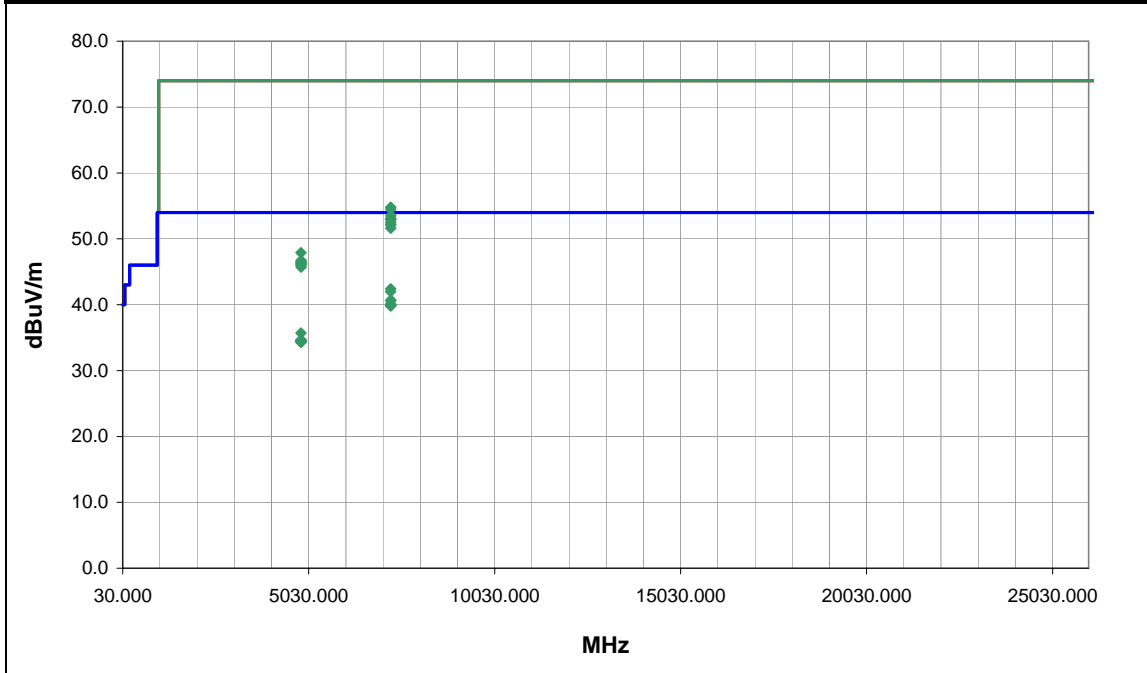
TEST PARAMETERS			
Antenna Height(s) (m)	1 - 4	Test Distance (m)	3

COMMENTS
802.11 Mode. Channel 1, Data Rates: 1, 11, 6, 36, and 54 Mbps.

EUT OPERATING MODES
802.11 Mode. Channel 1

DEVIATIONS FROM TEST STANDARD
No deviations.

Run #	1	Signature 
Configuration #	2	
Results	Pass	



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted dBuV/m	Spec. Limit dBuV/m	Compared to Spec. (dB)	Comments
7235.143	27.8	14.6	305.0	2.0	0.0	0.0	V-Horn	AV	0.0	42.4	54.0	-11.6	11 Mbps
7233.218	27.4	14.6	153.0	2.1	0.0	0.0	H-Horn	AV	0.0	42.0	54.0	-12.0	11 Mbps
7239.904	26.1	14.6	147.0	2.0	0.0	0.0	V-Horn	AV	0.0	40.7	54.0	-13.3	6 Mbps
7236.009	26.0	14.6	203.0	2.0	0.0	0.0	H-Horn	AV	0.0	40.6	54.0	-13.4	6 Mbps
7235.432	25.5	14.6	32.0	1.9	0.0	0.0	V-Horn	AV	0.0	40.1	54.0	-13.9	54 Mbps
7237.665	25.4	14.6	223.0	1.9	0.0	0.0	V-Horn	AV	0.0	40.0	54.0	-14.0	36 Mbps
7234.722	25.3	14.6	47.0	1.0	0.0	0.0	V-Horn	AV	0.0	39.9	54.0	-14.1	1 Mbps
7236.156	25.3	14.6	98.0	2.3	0.0	0.0	H-Horn	AV	0.0	39.9	54.0	-14.1	36 Mbps
7237.082	25.3	14.6	310.0	2.3	0.0	0.0	H-Horn	AV	0.0	39.9	54.0	-14.1	54 Mbps
7236.896	25.2	14.6	211.0	2.7	0.0	0.0	H-Horn	AV	0.0	39.8	54.0	-14.2	1 Mbps
4824.106	25.2	10.5	244.0	1.0	0.0	0.0	H-Horn	AV	0.0	35.7	54.0	-18.3	11 Mbps
7237.049	40.2	14.6	305.0	2.0	0.0	0.0	V-Horn	PK	0.0	54.8	74.0	-19.2	11 Mbps
4823.996	24.1	10.5	281.0	1.9	0.0	0.0	H-Horn	AV	0.0	34.6	54.0	-19.4	54 Mbps
4824.088	24.1	10.5	201.0	1.4	0.0	0.0	V-Horn	AV	0.0	34.6	54.0	-19.4	36 Mbps
4824.598	24.1	10.5	321.0	1.3	0.0	0.0	V-Horn	AV	0.0	34.6	54.0	-19.4	54 Mbps
7236.602	39.9	14.6	153.0	2.1	0.0	0.0	H-Horn	PK	0.0	54.5	74.0	-19.5	11 Mbps
4824.687	24.0	10.5	157.0	2.0	0.0	0.0	H-Horn	AV	0.0	34.5	54.0	-19.5	6 Mbps
4824.976	24.0	10.5	127.0	2.0	0.0	0.0	H-Horn	AV	0.0	34.5	54.0	-19.5	36 Mbps
4823.757	23.9	10.5	90.0	1.4	0.0	0.0	V-Horn	AV	0.0	34.4	54.0	-19.6	6 Mbps
4824.260	23.9	10.5	278.0	1.0	0.0	0.0	H-Horn	AV	0.0	34.4	54.0	-19.6	1 Mbps

RADIATED EMISSIONS DATA SHEET

EMC

EUT: CN3 Long Keyboard		Work Order: ITRM0160
Serial Number: 12090700027		Date: 06/19/07
Customer: Intermecc Technologies Corporation		Temperature: 22°C
Attendees: None		Humidity: 42%
Project: None		Barometric Pres.: 29.98
Tested by: Jaemi Suh	Power: Battery	Job Site: OC13

TEST SPECIFICATIONS	Test Method
FCC 15.247 (DTS):2006	ANSI C63.4:2003 KDB No. 558074

TEST PARAMETERS			
Antenna Height(s) (m)	1 - 4	Test Distance (m)	3

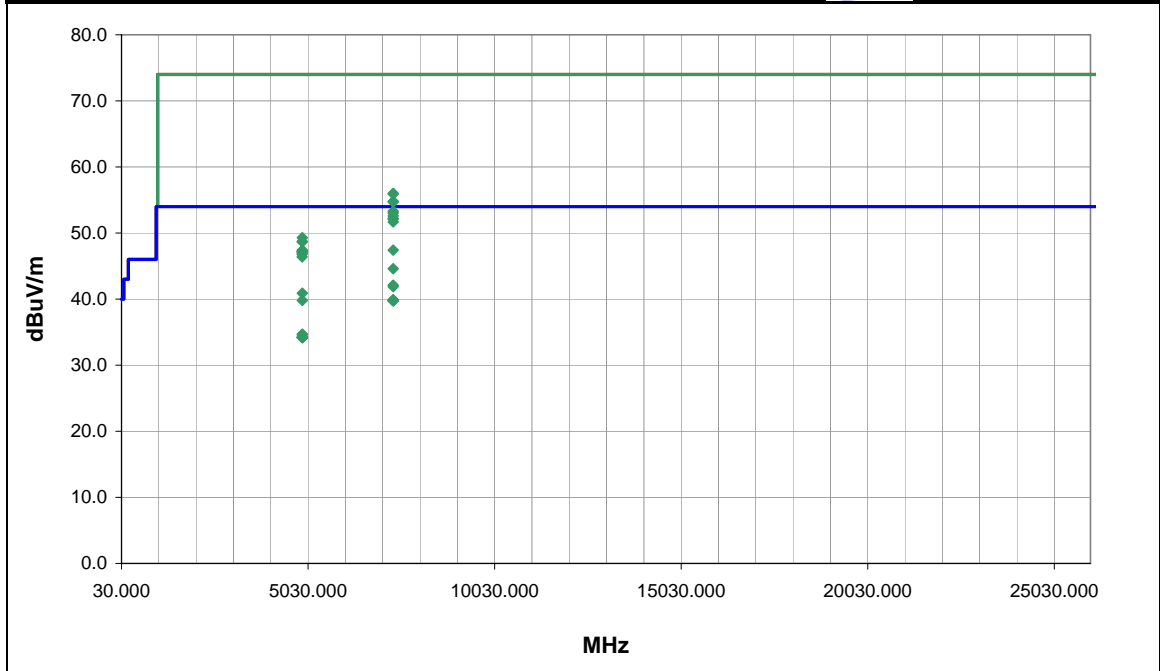
COMMENTS
802.11 Mode. Channel 6, Data Rates: 1, 11, 6, 36, and 54 Mbps.

EUT OPERATING MODES
802.11 Mode. Channel 6

DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	2	 Signature
Configuration #	2	
Results	Pass	



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted dBuV/m	Spec. Limit dBuV/m	Compared to Spec. (dB)	Comments
7311.864	32.5	14.9	156.0	1.9	0.0	0.0	H-Horn	AV	0.0	47.4	54.0	-6.6	1 Mbps
7311.842	29.7	14.9	215.0	2.0	0.0	0.0	V-Horn	AV	0.0	44.6	54.0	-9.4	1 Mbps
7311.976	27.2	14.9	211.0	1.9	0.0	0.0	H-Horn	AV	0.0	42.1	54.0	-11.9	11 Mbps
7310.463	27.0	14.9	159.0	1.8	0.0	0.0	H-Horn	AV	0.0	41.9	54.0	-12.1	6 Mbps
4873.998	30.3	10.6	115.0	1.0	0.0	0.0	V-Horn	AV	0.0	40.9	54.0	-13.1	1 Mbps
7312.592	25.0	14.9	286.0	2.1	0.0	0.0	V-Horn	AV	0.0	39.9	54.0	-14.1	6 Mbps
4873.926	29.2	10.6	253.0	1.0	0.0	0.0	H-Horn	AV	0.0	39.8	54.0	-14.2	1 Mbps
7309.777	24.9	14.9	152.0	1.8	0.0	0.0	H-Horn	AV	0.0	39.8	54.0	-14.2	54 Mbps
7310.017	24.9	14.9	84.0	2.4	0.0	0.0	V-Horn	AV	0.0	39.8	54.0	-14.2	11 Mbps
7311.190	24.9	14.9	213.0	1.8	0.0	0.0	H-Horn	AV	0.0	39.8	54.0	-14.2	36 Mbps
7311.493	24.9	14.9	151.0	2.1	0.0	0.0	V-Horn	AV	0.0	39.8	54.0	-14.2	36 Mbps
7311.321	24.8	14.9	273.0	2.3	0.0	0.0	V-Horn	AV	0.0	39.7	54.0	-14.3	54 Mbps
7311.703	41.1	14.9	156.0	1.9	0.0	0.0	H-Horn	PK	0.0	56.0	74.0	-18.0	1 Mbps
7311.081	41.0	14.9	159.0	1.8	0.0	0.0	H-Horn	PK	0.0	55.9	74.0	-18.1	6 Mbps
7310.106	39.9	14.9	215.0	2.0	0.0	0.0	V-Horn	PK	0.0	54.8	74.0	-19.2	1 Mbps
4873.703	24.1	10.6	90.0	1.0	0.0	0.0	V-Horn	AV	0.0	34.7	54.0	-19.3	11 Mbps
7310.141	39.8	14.9	211.0	1.9	0.0	0.0	H-Horn	PK	0.0	54.7	74.0	-19.3	11 Mbps
4874.801	24.0	10.6	110.0	1.0	0.0	0.0	V-Horn	AV	0.0	34.6	54.0	-19.4	6 Mbps
4875.161	23.7	10.6	33.0	2.1	0.0	0.0	H-Horn	AV	0.0	34.3	54.0	-19.7	6 Mbps
4873.648	23.6	10.6	91.0	1.0	0.0	0.0	V-Horn	AV	0.0	34.2	54.0	-19.8	36 Mbps
4874.356	23.6	10.6	300.0	2.1	0.0	0.0	H-Horn	AV	0.0	34.2	54.0	-19.8	36 Mbps
4875.024	23.6	10.6	1.0	2.2	0.0	0.0	H-Horn	AV	0.0	34.2	54.0	-19.8	11 Mbps
4875.281	23.6	10.6	55.0	2.0	0.0	0.0	H-Horn	AV	0.0	34.2	54.0	-19.8	54 Mbps
4876.020	23.6	10.6	113.0	1.0	0.0	0.0	V-Horn	AV	0.0	34.2	54.0	-19.8	54 Mbps
7311.669	38.4	14.9	84.0	2.4	0.0	0.0	V-Horn	PK	0.0	53.3	74.0	-20.7	11 Mbps
7311.116	38.1	14.9	152.0	1.8	0.0	0.0	H-Horn	PK	0.0	53.0	74.0	-21.0	54 Mbps
7312.430	37.7	14.9	151.0	2.1	0.0	0.0	V-Horn	PK	0.0	52.6	74.0	-21.4	36 Mbps
7311.006	37.3	14.9	286.0	2.1	0.0	0.0	V-Horn	PK	0.0	52.2	74.0	-21.8	6 Mbps

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted dBuV/m	Spec. Limit dBuV/m	Compared to Spec. (dB)	Comments
7310.381	37.2	14.9	273.0	2.3	0.0	0.0	V-Horn	PK	0.0	52.1	74.0	-21.9	54 Mbps
7309.747	36.8	14.9	213.0	1.8	0.0	0.0	H-Horn	PK	0.0	51.7	74.0	-22.3	36 Mbps
4874.115	38.7	10.6	115.0	1.0	0.0	0.0	V-Horn	PK	0.0	49.3	74.0	-24.7	1 Mbps
4873.238	38.1	10.6	110.0	1.0	0.0	0.0	V-Horn	PK	0.0	48.7	74.0	-25.3	6 Mbps
4873.932	38.1	10.6	253.0	1.0	0.0	0.0	H-Horn	PK	0.0	48.7	74.0	-25.3	1 Mbps
4875.500	36.8	10.6	113.0	1.0	0.0	0.0	V-Horn	PK	0.0	47.4	74.0	-26.6	54 Mbps
4875.395	36.7	10.6	91.0	1.0	0.0	0.0	V-Horn	PK	0.0	47.3	74.0	-26.7	36 Mbps
4872.619	36.6	10.6	1.0	2.2	0.0	0.0	H-Horn	PK	0.0	47.2	74.0	-26.8	11 Mbps
4874.213	36.6	10.6	90.0	1.0	0.0	0.0	V-Horn	PK	0.0	47.2	74.0	-26.8	11 Mbps
4873.440	36.4	10.6	55.0	2.0	0.0	0.0	H-Horn	PK	0.0	47.0	74.0	-27.0	54 Mbps
4872.599	36.2	10.6	33.0	2.1	0.0	0.0	H-Horn	PK	0.0	46.8	74.0	-27.2	6 Mbps
4872.619	35.8	10.6	300.0	2.1	0.0	0.0	H-Horn	PK	0.0	46.4	74.0	-27.6	36 Mbps

RADIATED EMISSIONS DATA SHEET

EMC

EUT: CN3 Long Keyboard		Work Order: ITRM0160
Serial Number: 12090700027		Date: 06/19/07
Customer: Intermecc Technologies Corporation		Temperature: 22°C
Attendees: None		Humidity: 42%
Project: None		Barometric Pres.: 29.98
Tested by: Jaemi Suh	Power: Battery	Job Site: OC13

TEST SPECIFICATIONS	Test Method
FCC 15.247 (DTS):2006	ANSI C63.4:2003 KDB No. 558074

TEST PARAMETERS			
Antenna Height(s) (m)	1 - 4	Test Distance (m)	3

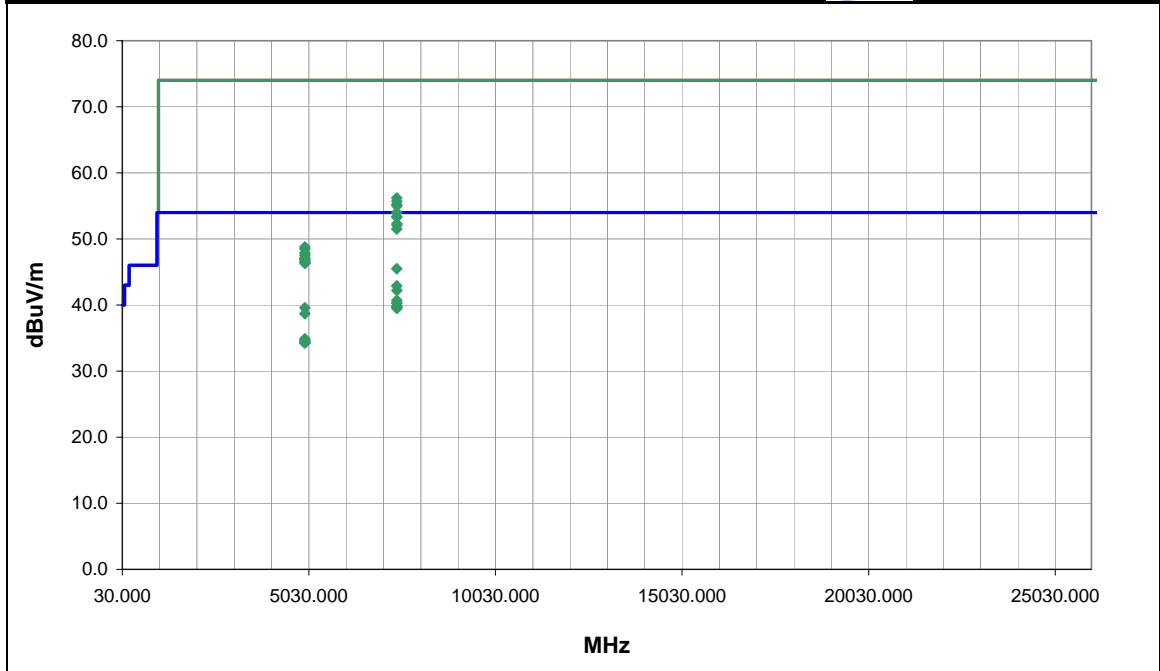
COMMENTS
802.11 Mode. Channel 11, Data Rate: 1, 11, 6, 36, and 54 Mbps.

EUT OPERATING MODES
802.11 Mode. Channel 11

DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	3	
Configuration #	2	
Results	Pass	



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted dBuV/m	Spec. Limit dBuV/m	Compared to Spec. (dB)	Comments
7385.173	30.2	15.3	1.0	1.3	0.0	0.0	V-Horn	AV	0.0	45.5	54.0	-8.5	1 Mbps
7384.966	27.6	15.3	235.0	1.3	0.0	0.0	V-Horn	AV	0.0	42.9	54.0	-11.1	11 Mbps
7386.215	26.9	15.3	328.0	1.3	0.0	0.0	V-Horn	AV	0.0	42.2	54.0	-11.8	6 Mbps
7387.418	25.4	15.3	295.0	1.5	0.0	0.0	H-Horn	AV	0.0	40.7	54.0	-13.3	11 Mbps
7383.544	25.0	15.3	360.0	1.5	0.0	0.0	H-Horn	AV	0.0	40.3	54.0	-13.7	1 Mbps
7385.667	25.0	15.3	241.0	1.9	0.0	0.0	H-Horn	AV	0.0	40.3	54.0	-13.7	6 Mbps
7384.946	24.5	15.3	194.0	1.8	0.0	0.0	H-Horn	AV	0.0	39.8	54.0	-14.2	36 Mbps
7385.425	24.5	15.3	316.0	1.2	0.0	0.0	V-Horn	AV	0.0	39.8	54.0	-14.2	36 Mbps
4924.037	28.9	10.7	126.0	1.0	0.0	0.0	V-Horn	AV	0.0	39.6	54.0	-14.4	1 Mbps
7386.127	24.3	15.3	262.0	3.0	0.0	0.0	V-Horn	AV	0.0	39.6	54.0	-14.4	54 Mbps
7386.298	24.2	15.3	277.0	1.8	0.0	0.0	H-Horn	AV	0.0	39.5	54.0	-14.5	54 Mbps
4924.063	28.0	10.7	251.0	1.0	0.0	0.0	H-Horn	AV	0.0	38.7	54.0	-15.3	1 Mbps
7384.772	40.9	15.3	235.0	1.3	0.0	0.0	V-Horn	PK	0.0	56.2	74.0	-17.8	11 Mbps
7387.331	40.4	15.3	328.0	1.3	0.0	0.0	V-Horn	PK	0.0	55.7	74.0	-18.3	6 Mbps
7384.584	39.9	15.3	316.0	1.2	0.0	0.0	V-Horn	PK	0.0	55.2	74.0	-18.8	36 Mbps
7386.807	39.7	15.3	1.0	1.3	0.0	0.0	V-Horn	PK	0.0	55.0	74.0	-19.0	1 Mbps
4924.077	24.2	10.7	231.0	1.0	0.0	0.0	H-Horn	AV	0.0	34.9	54.0	-19.1	11 Mbps
4923.612	24.0	10.7	98.0	1.5	0.0	0.0	V-Horn	AV	0.0	34.7	54.0	-19.3	6 Mbps
4923.920	23.8	10.7	0.0	1.5	0.0	0.0	V-Horn	AV	0.0	34.5	54.0	-19.5	11 Mbps
4922.115	23.6	10.7	332.0	1.4	0.0	0.0	V-Horn	AV	0.0	34.3	54.0	-19.7	36 Mbps
4922.863	23.6	10.7	333.0	3.1	0.0	0.0	H-Horn	AV	0.0	34.3	54.0	-19.7	36 Mbps
4923.368	23.6	10.7	1.0	1.8	0.0	0.0	V-Horn	AV	0.0	34.3	54.0	-19.7	54 Mbps
4923.548	23.6	10.7	147.0	1.6	0.0	0.0	H-Horn	AV	0.0	34.3	54.0	-19.7	54 Mbps
4923.783	23.6	10.7	1.0	3.1	0.0	0.0	H-Horn	AV	0.0	34.3	54.0	-19.7	6 Mbps
7385.264	38.7	15.3	241.0	1.9	0.0	0.0	H-Horn	PK	0.0	54.0	74.0	-20.0	6 Mbps
7384.709	38.1	15.3	295.0	1.5	0.0	0.0	H-Horn	PK	0.0	53.4	74.0	-20.6	11 Mbps
7385.643	38.0	15.3	194.0	1.8	0.0	0.0	H-Horn	PK	0.0	53.3	74.0	-20.7	36 Mbps
7385.516	37.0	15.3	360.0	1.5	0.0	0.0	H-Horn	PK	0.0	52.3	74.0	-21.7	1 Mbps

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted dBuV/m	Spec. Limit dBuV/m	Compared to Spec. (dB)	Comments
7385.505	36.8	15.3	277.0	1.8	0.0	0.0	H-Horn	PK	0.0	52.1	74.0	-21.9	54 Mbps
7384.762	36.2	15.3	262.0	3.0	0.0	0.0	V-Horn	PK	0.0	51.5	74.0	-22.5	54 Mbps
4923.988	38.1	10.7	126.0	1.0	0.0	0.0	V-Horn	PK	0.0	48.8	74.0	-25.2	1 Mbps
4923.734	37.8	10.7	251.0	1.0	0.0	0.0	H-Horn	PK	0.0	48.5	74.0	-25.5	1 Mbps
4922.991	37.2	10.7	98.0	1.5	0.0	0.0	V-Horn	PK	0.0	47.9	74.0	-26.1	6 Mbps
4922.561	36.8	10.7	231.0	1.0	0.0	0.0	H-Horn	PK	0.0	47.5	74.0	-26.5	11 Mbps
4924.168	36.4	10.7	0.0	1.5	0.0	0.0	V-Horn	PK	0.0	47.1	74.0	-26.9	11 Mbps
4922.692	36.3	10.7	147.0	1.6	0.0	0.0	H-Horn	PK	0.0	47.0	74.0	-27.0	54 Mbps
4923.438	36.2	10.7	333.0	3.1	0.0	0.0	H-Horn	PK	0.0	46.9	74.0	-27.1	36 Mbps
4924.669	35.9	10.7	332.0	1.4	0.0	0.0	V-Horn	PK	0.0	46.6	74.0	-27.4	36 Mbps
4922.818	35.8	10.7	1.0	3.1	0.0	0.0	H-Horn	PK	0.0	46.5	74.0	-27.5	6 Mbps
4924.765	35.6	10.7	1.0	1.8	0.0	0.0	V-Horn	PK	0.0	46.3	74.0	-27.7	54 Mbps

EUT:	CN3 Long Keyboard	Work Order:	ITRM0160
Serial Number:	12090700027	Date:	06/25/07
Customer:	Intermec Technologies Corporation	Temperature:	22°C
Attendees:	None	Humidity:	42%
Project:	None	Barometric Pres.:	29.98
Tested by:	Jaemi Suh	Power:	120VAC/60Hz
		Job Site:	OC06

TEST SPECIFICATIONS	Test Method
FCC 15.247 (DTS):2006	ANSI C63.4:2003 KDB No. 558074

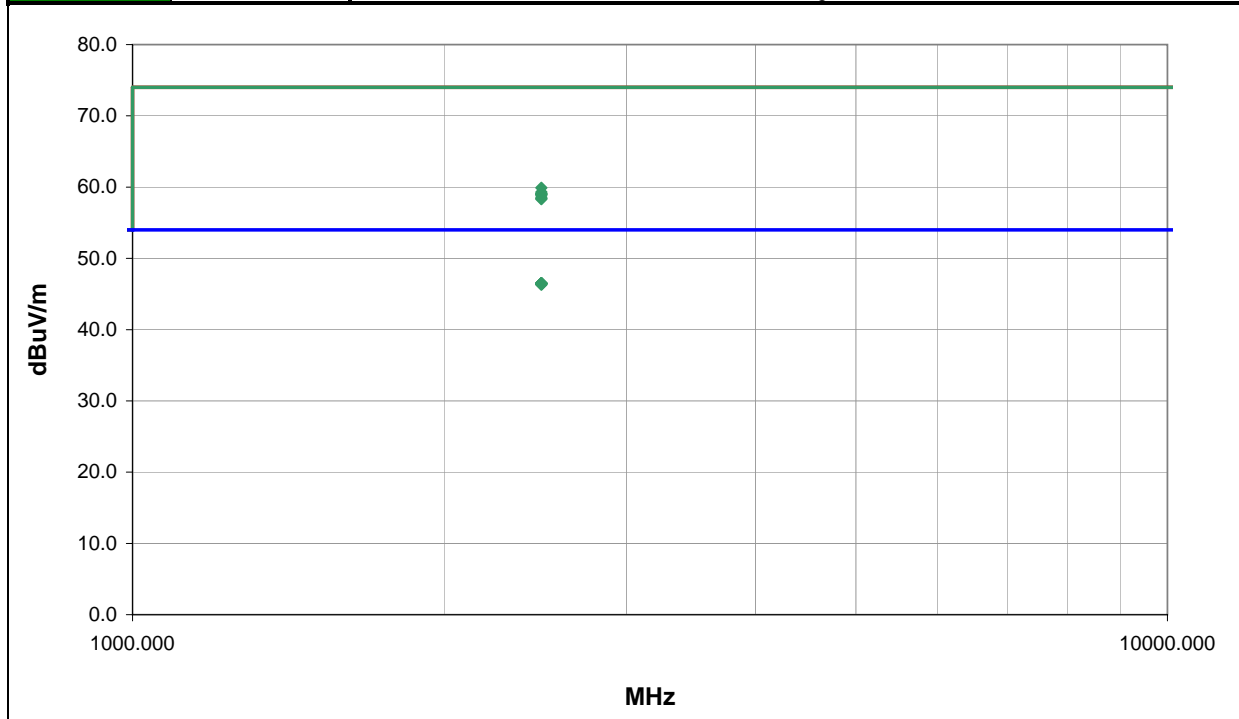
TEST PARAMETERS
Antenna Height(s) (m) 1 - 4 Test Distance (m) 3

COMMENTS
802.11 Mode. High Channel (Chanek 11). All Data Rates: 1, 11, 6, 36, and 54 Mbps.

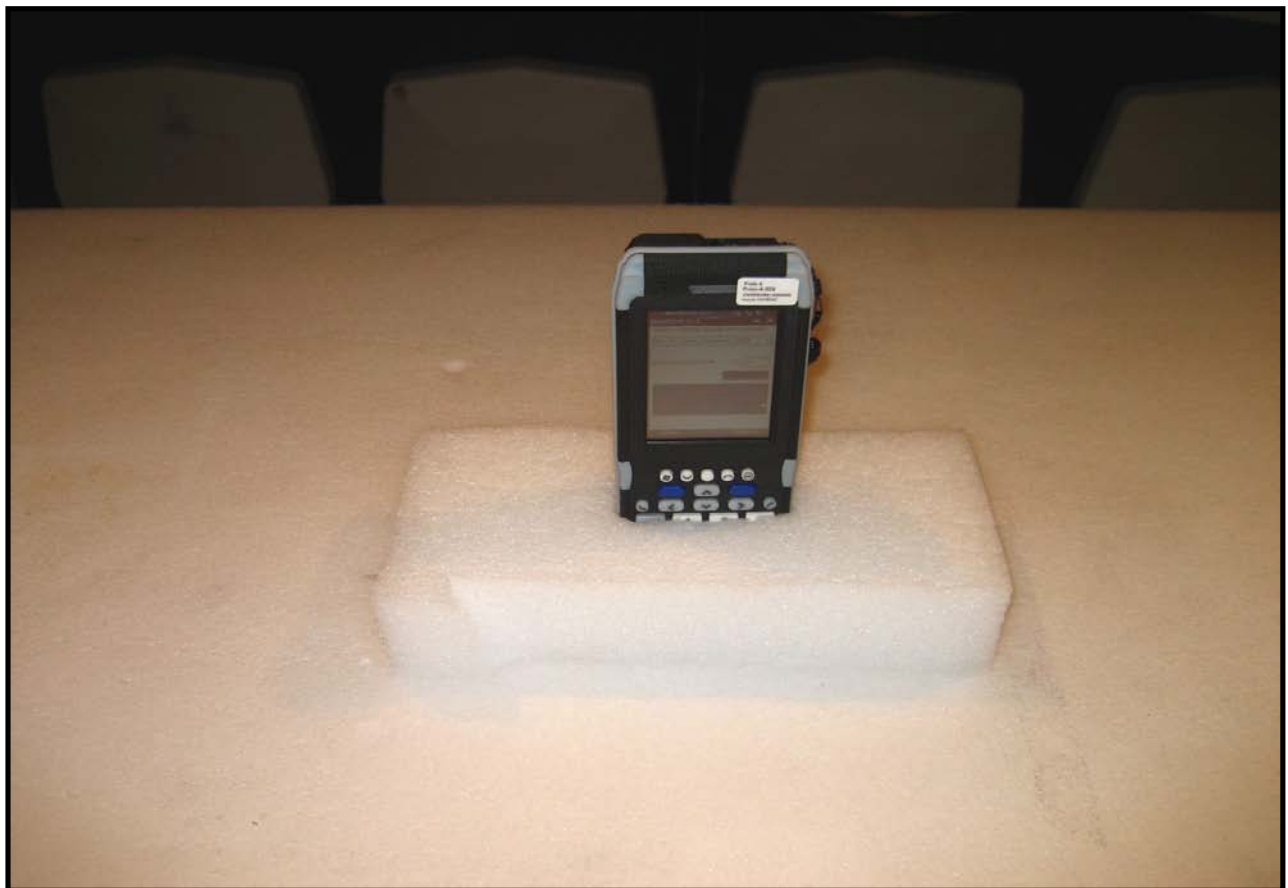
EUT OPERATING MODES
802.11 High Channel. 1 Mbps.

DEVIATIONS FROM TEST STANDARD
No deviations.

Run #	8	Signature 
Configuration #	2	
Results	Pass	



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted dBuV/m	Spec. Limit dBuV/m	Compared to Spec. (dB)
2483.508	25.1	1.4	51.0	1.0	0.0	20.0	V-Horn	AV	0.0	46.5	54.0	-7.5
2483.394	25.1	1.4	139.0	1.0	0.0	20.0	V-Horn	AV	0.0	46.5	54.0	-7.5
2483.395	25.1	1.4	193.0	1.0	0.0	20.0	V-Horn	AV	0.0	46.5	54.0	-7.5
2483.500	25.1	1.4	202.0	1.0	0.0	20.0	H-Horn	AV	0.0	46.5	54.0	-7.5
2483.544	25.1	1.4	224.0	1.0	0.0	20.0	V-Horn	AV	0.0	46.5	54.0	-7.5
2483.367	25.1	1.4	316.0	2.2	0.0	20.0	H-Horn	AV	0.0	46.5	54.0	-7.5
2483.369	25.0	1.4	60.0	1.0	0.0	20.0	H-Horn	AV	0.0	46.4	54.0	-7.6
2483.364	25.0	1.4	63.0	1.0	0.0	20.0	V-Horn	AV	0.0	46.4	54.0	-7.6
2483.460	25.0	1.4	250.0	2.1	0.0	20.0	H-Horn	AV	0.0	46.4	54.0	-7.6
2483.570	24.9	1.4	161.0	2.1	0.0	20.0	H-Horn	AV	0.0	46.3	54.0	-7.7
2483.555	38.5	1.4	250.0	2.1	0.0	20.0	H-Horn	PK	0.0	59.9	74.0	-14.1
2483.586	37.9	1.4	224.0	1.0	0.0	20.0	V-Horn	PK	0.0	59.3	74.0	-14.7
2483.599	37.7	1.4	63.0	1.0	0.0	20.0	V-Horn	PK	0.0	59.1	74.0	-14.9
2483.471	37.6	1.4	51.0	1.0	0.0	20.0	V-Horn	PK	0.0	59.0	74.0	-15.0
2483.433	37.6	1.4	60.0	1.0	0.0	20.0	H-Horn	PK	0.0	59.0	74.0	-15.0
2483.476	37.6	1.4	202.0	1.0	0.0	20.0	H-Horn	PK	0.0	59.0	74.0	-15.0
2483.486	37.4	1.4	139.0	1.0	0.0	20.0	V-Horn	PK	0.0	58.8	74.0	-15.2
2483.478	37.1	1.4	161.0	2.1	0.0	20.0	H-Horn	PK	0.0	58.5	74.0	-15.5
2483.491	37.0	1.4	316.0	2.2	0.0	20.0	H-Horn	PK	0.0	58.4	74.0	-15.6
2483.579	36.9	1.4	193.0	1.0	0.0	20.0	V-Horn	PK	0.0	58.3	74.0	-15.7



Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Spectrum Analyzer	Hewlett Packard	8593E	AAP	12/14/2006	13

MEASUREMENT UNCERTAINTY

Measurement uncertainty is used to reflect the accuracy of the measured result as compared with its "true" or theoretically correct value. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4. In the case of transient tests our test equipment has been demonstrated by calibration to provide at least a 95% confidence that it complies with the test specification requirements. The measurement uncertainty for any test is available upon request.

TEST DESCRIPTION

The occupied bandwidth was measured with the EUT set to low, medium, and high transmit frequencies. The measurement was made using a direct connection between the RF output of the EUT and the spectrum analyzer. The EUT was transmitting at its maximum data rate in a no hop mode.

EMC

OCCUPIED BANDWIDTH

EUT: CN3 Long Keyboard	Work Order: ITRM0160
Serial Number: 12090700022	Date: 06/22/07
Customer: Intermec Technologies Corporation	Temperature: 23 C°
Attendees: None	Humidity: 42%
Project: None	Barometric Pres.: 30.03
Tested by: Jaemi Suh	Power: 120VAC/60Hz
	Job Site: OC13

TEST SPECIFICATIONS		Test Method
FCC 15.247 (DTS):2006	ANSI C63.4:2003 KDB No. 558074	

COMMENTS
802.11 Mode

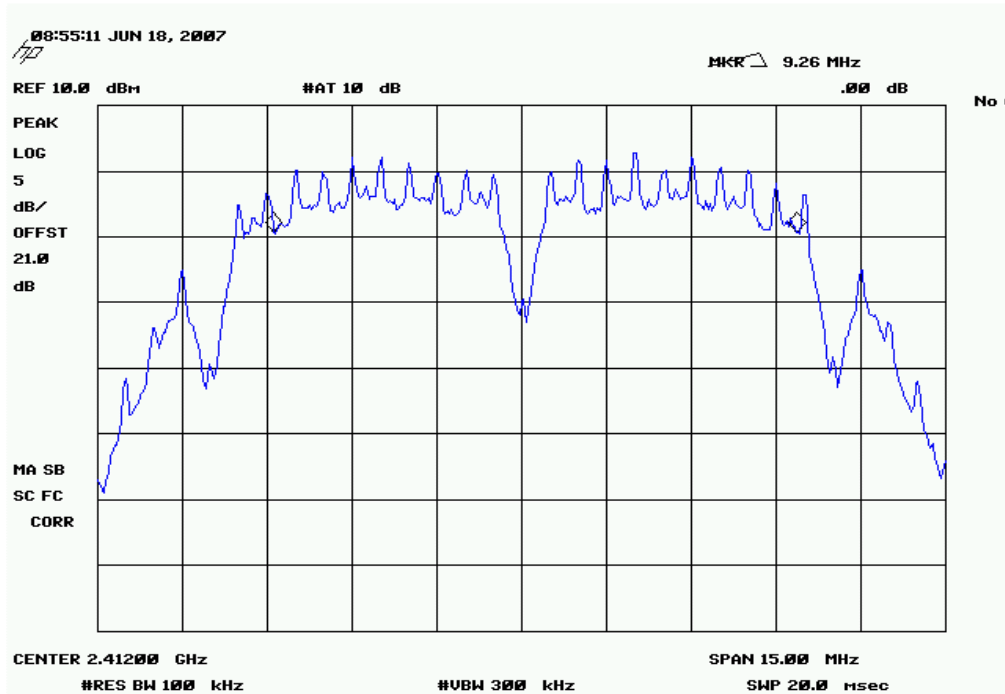
DEVIATIONS FROM TEST STANDARD

Configuration #	1	Signature 
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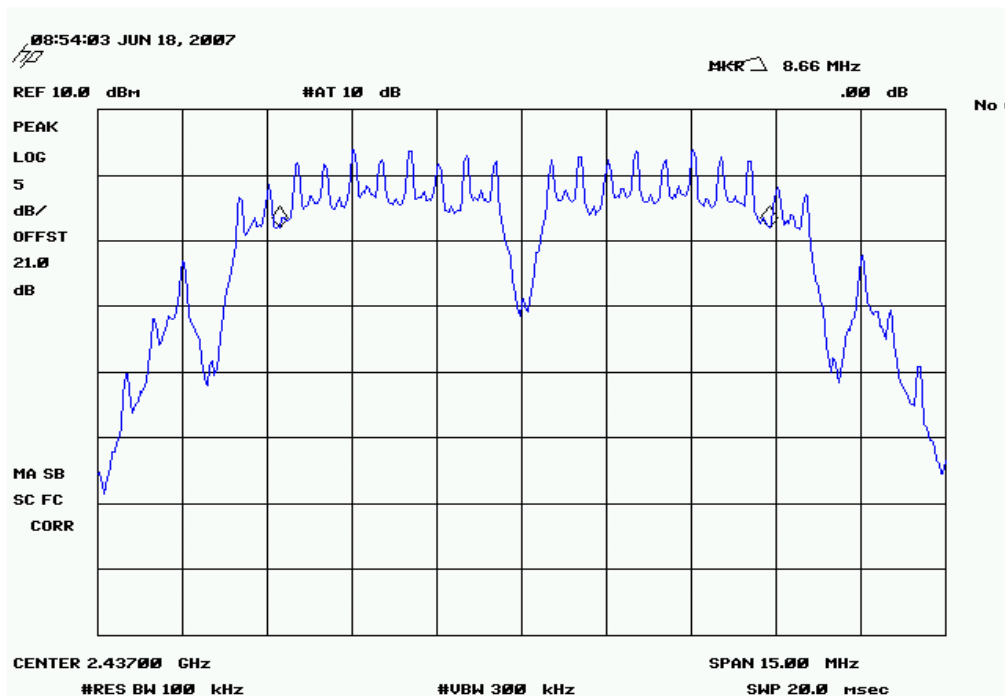
		Value	Limit	Results
802.11(b) 1 Mbps	Low Channel	9.26 MHz	≥ 500 KHz	Pass
	Mid Channel	8.66 MHz	≥ 500 KHz	Pass
	High Channel	9.26 MHz	≥ 500 KHz	Pass
802.11(b) 11 Mbps	Low Channel	10.61 MHz	≥ 500 KHz	Pass
	Mid Channel	10.28 MHz	≥ 500 KHz	Pass
	High Channel	10.35 MHz	≥ 500 KHz	Pass
802.11(g) 6 Mbps	Low Channel	16.40 MHz	≥ 500 KHz	Pass
	Mid Channel	16.10 MHz	≥ 500 KHz	Pass
	High Channel	16.25 MHz	≥ 500 KHz	Pass
802.11(g) 36 Mbps	Low Channel	16.50 MHz	≥ 500 KHz	Pass
	Mid Channel	16.50 MHz	≥ 500 KHz	Pass
	High Channel	16.35 MHz	≥ 500 KHz	Pass
802.11(g) 54 Mbps	Low Channel	14.65 MHz	≥ 500 KHz	Pass
	Mid Channel	15.90 MHz	≥ 500 KHz	Pass
	High Channel	13.30 MHz	≥ 500 KHz	Pass

OCCUPIED BANDWIDTH

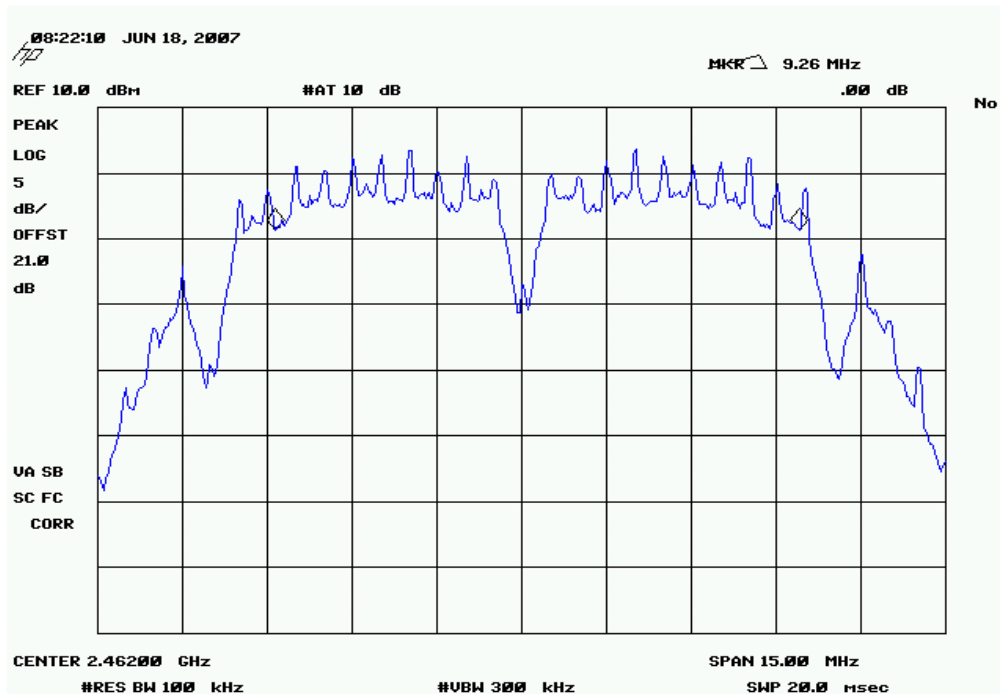
802.11(b) 1 Mbps, Low Channel		
Result: Pass	Value: 9.26 MHz	Limit: ≥ 500 KHz



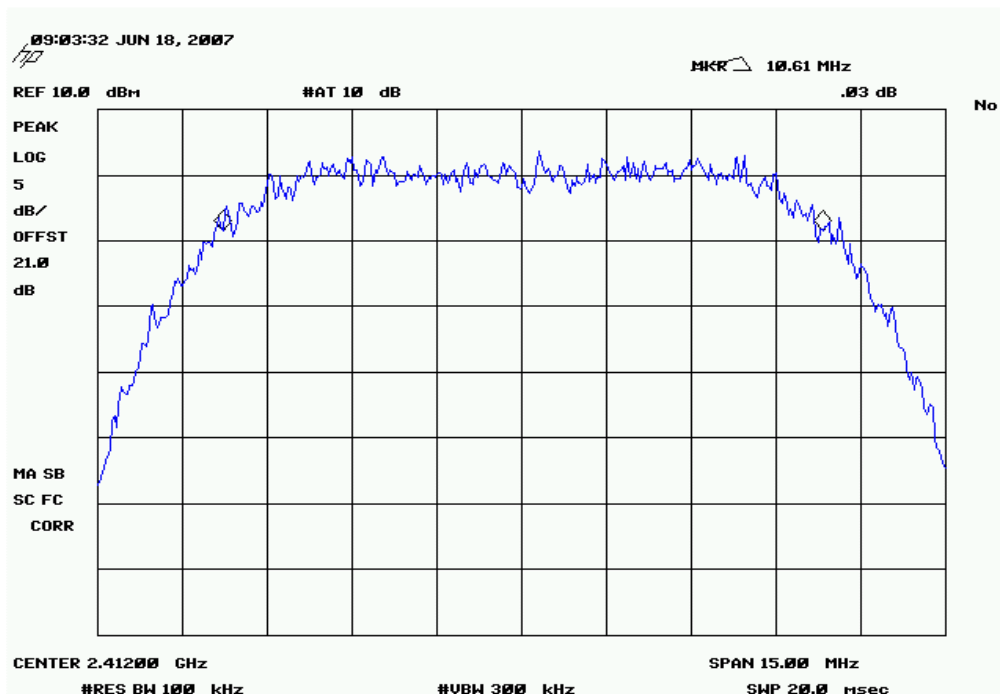
802.11(b) 1 Mbps, Mid Channel		
Result: Pass	Value: 8.66 MHz	Limit: ≥ 500 KHz



802.11(b) 1 Mbps, High Channel
Result: Pass **Value:** 9.26 MHz **Limit:** ≥ 500 KHz

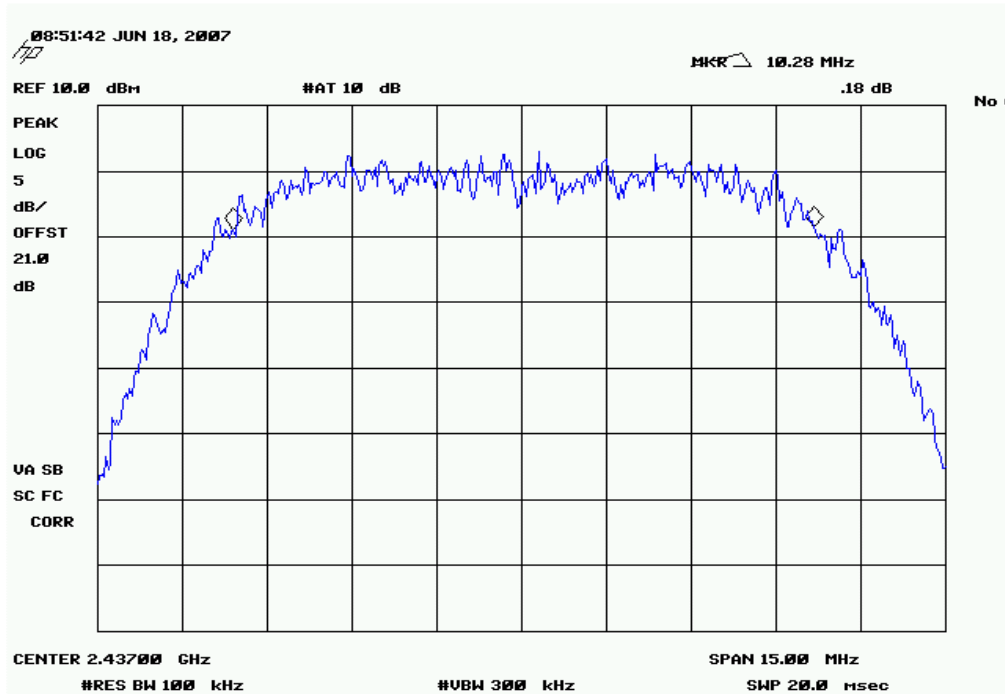


802.11(b) 11 Mbps, Low Channel
Result: Pass **Value:** 10.61 MHz **Limit:** ≥ 500 KHz

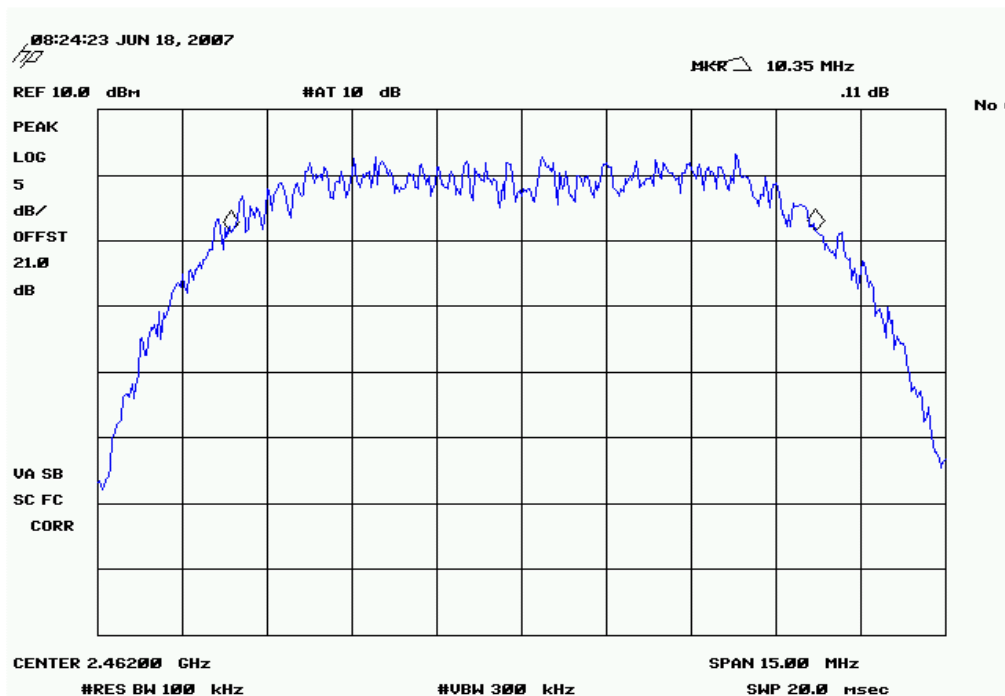


OCCUPIED BANDWIDTH

802.11(b) 11 Mbps, Mid Channel
Result: Pass **Value:** 10.28 MHz **Limit:** ≥ 500 KHz

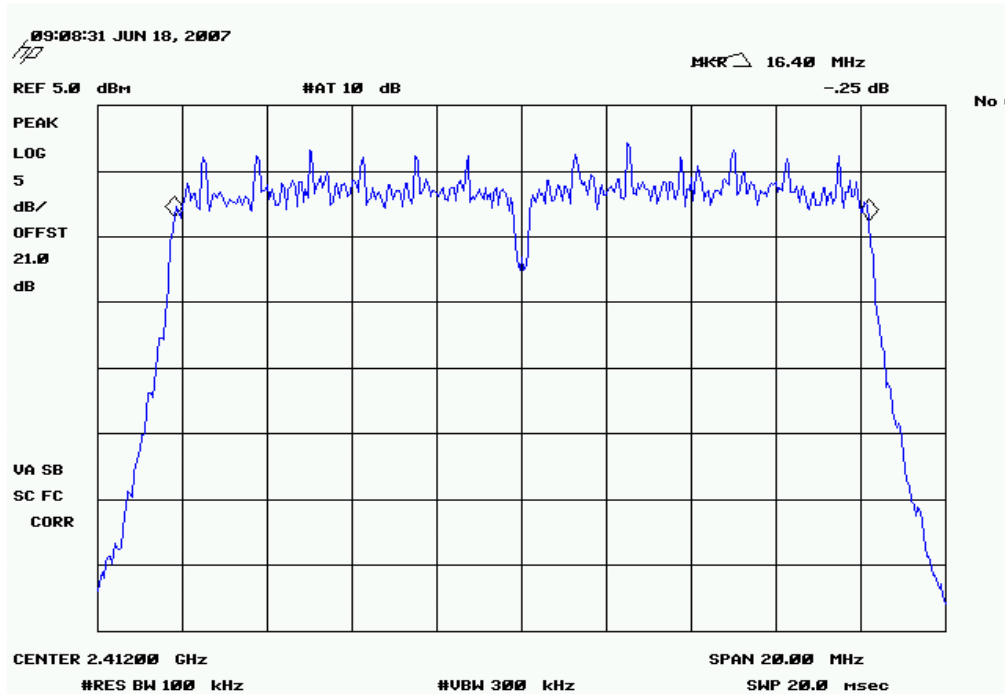


802.11(b) 11 Mbps, High Channel
Result: Pass **Value:** 10.35 MHz **Limit:** ≥ 500 KHz

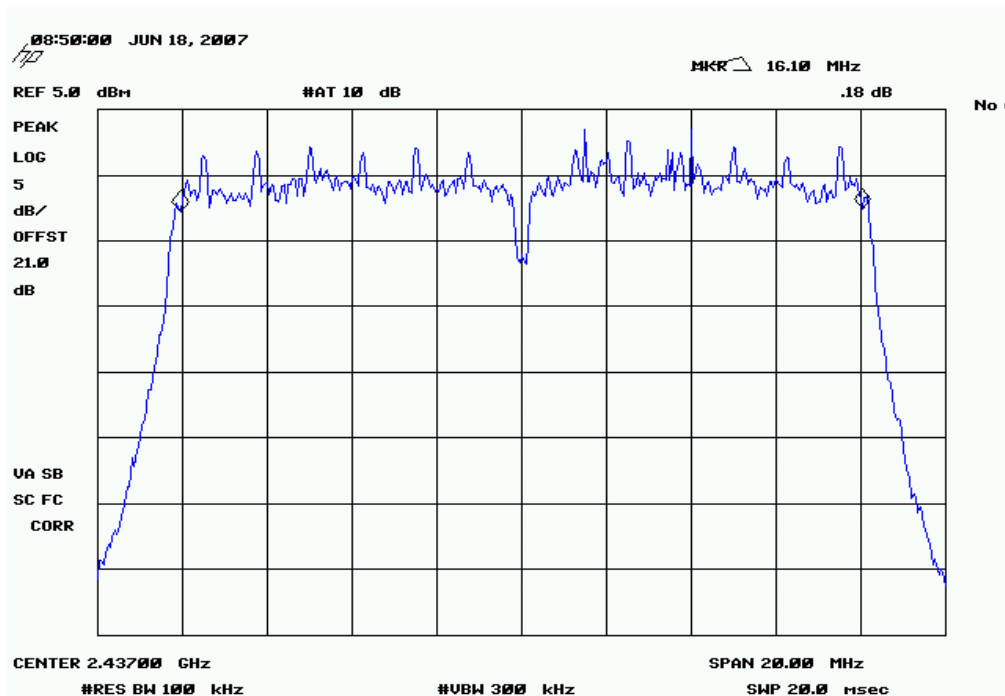


OCCUPIED BANDWIDTH

802.11(g) 6 Mbps, Low Channel		
Result: Pass	Value: 16.40 MHz	Limit: ≥ 500 KHz

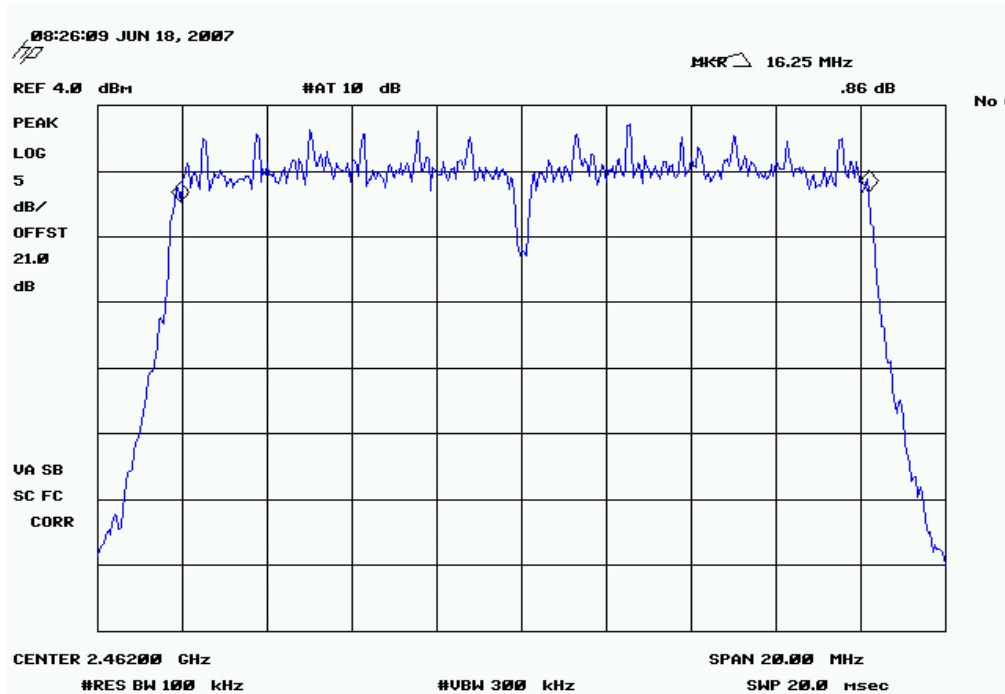


802.11(g) 6 Mbps, Mid Channel		
Result: Pass	Value: 16.10 MHz	Limit: ≥ 500 KHz

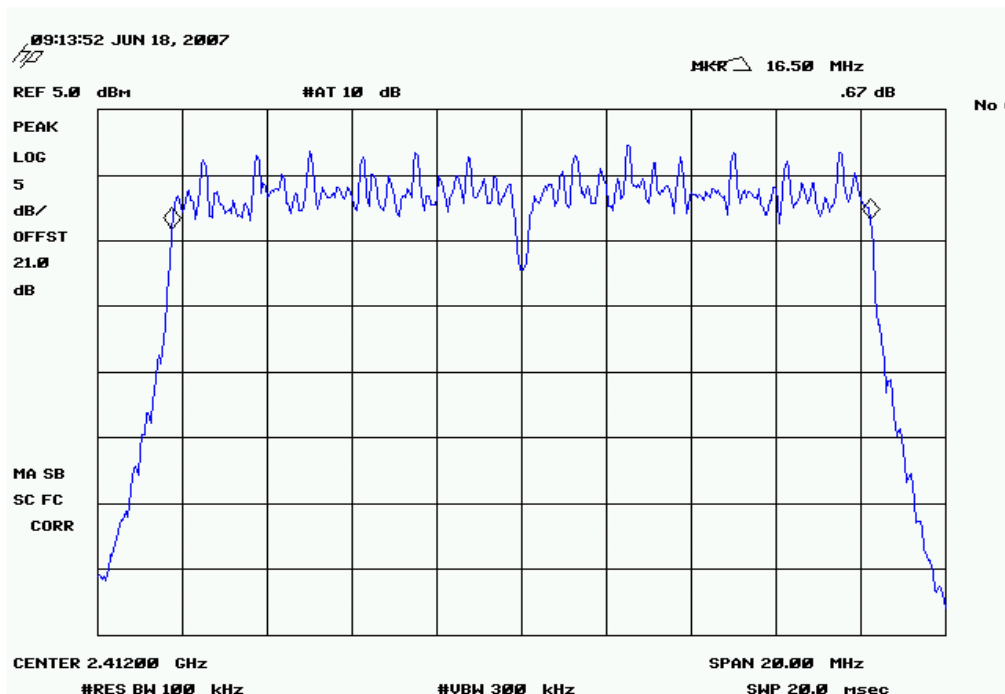


OCCUPIED BANDWIDTH

802.11(g) 6 Mbps, High Channel		
Result: Pass	Value: 16.25 MHz	Limit: ≥ 500 KHz

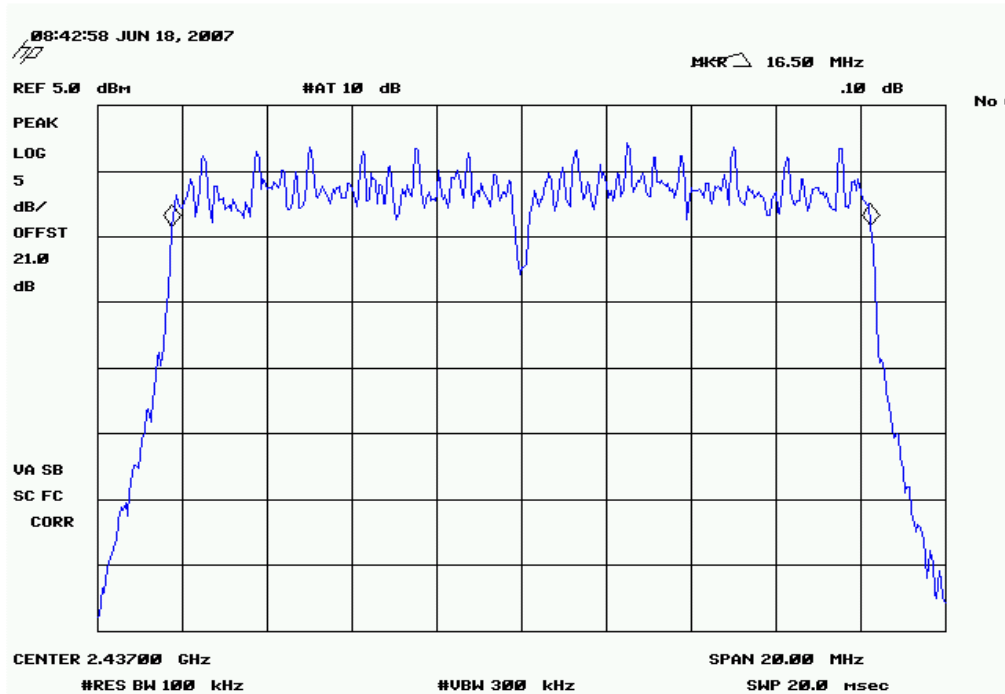


802.11(g) 36 Mbps, Low Channel		
Result: Pass	Value: 16.50 MHz	Limit: ≥ 500 KHz

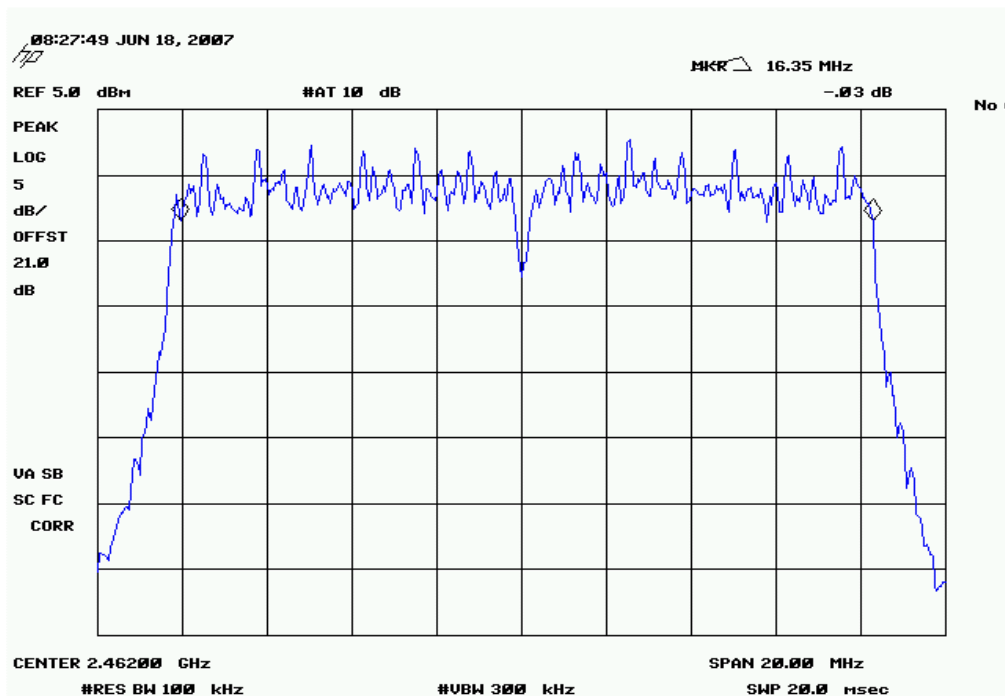


OCCUPIED BANDWIDTH

802.11(g) 36 Mbps, Mid Channel		
Result: Pass	Value: 16.50 MHz	Limit: ≥ 500 KHz

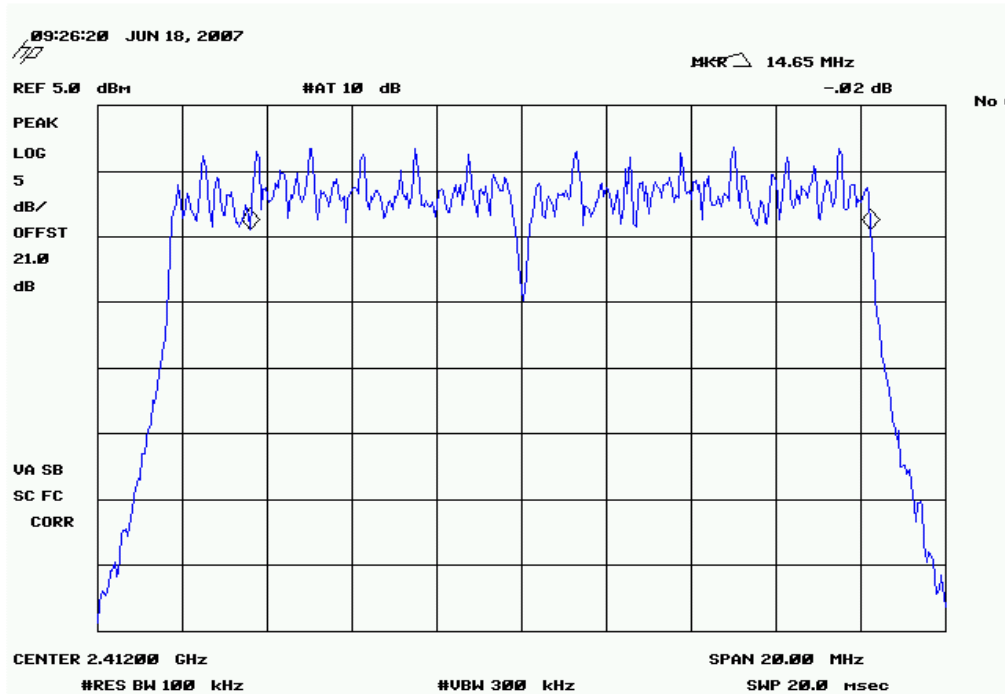


802.11(g) 36 Mbps, High Channel		
Result: Pass	Value: 16.35 MHz	Limit: ≥ 500 KHz

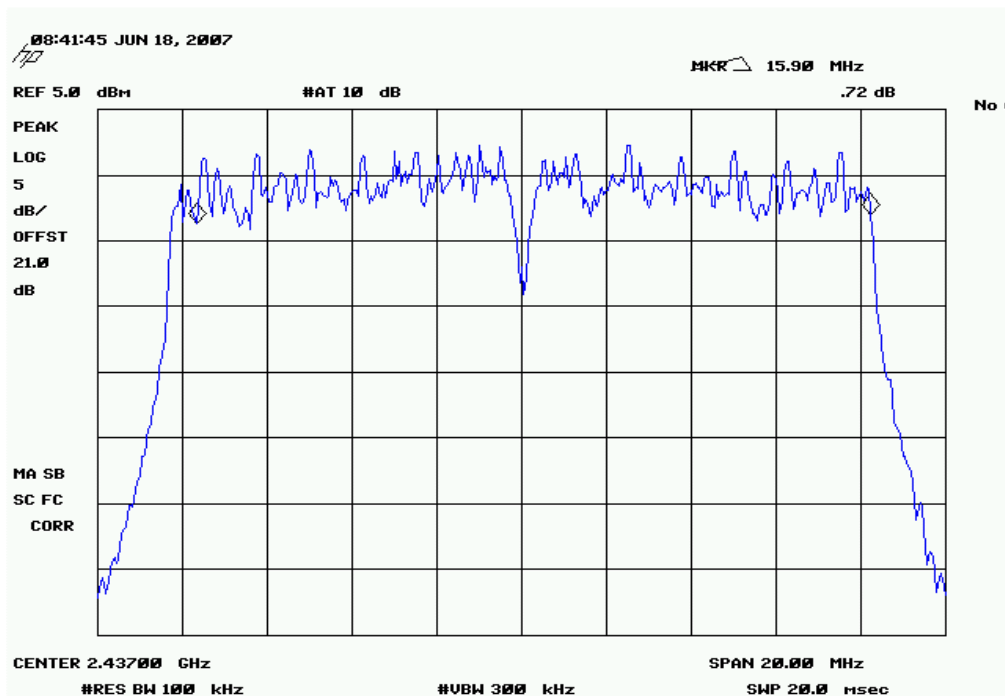


OCCUPIED BANDWIDTH

802.11(g) 54 Mbps, Low Channel		
Result: Pass	Value: 14.65 MHz	Limit: ≥ 500 KHz



802.11(g) 54 Mbps, Mid Channel		
Result: Pass	Value: 15.90 MHz	Limit: ≥ 500 KHz



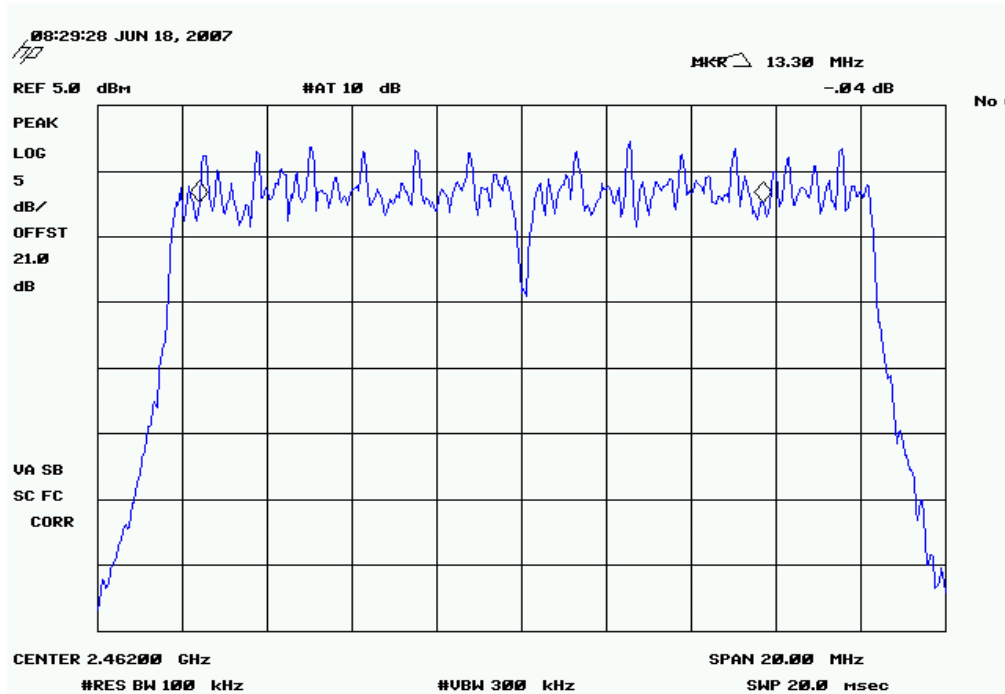
OCCUPIED BANDWIDTH

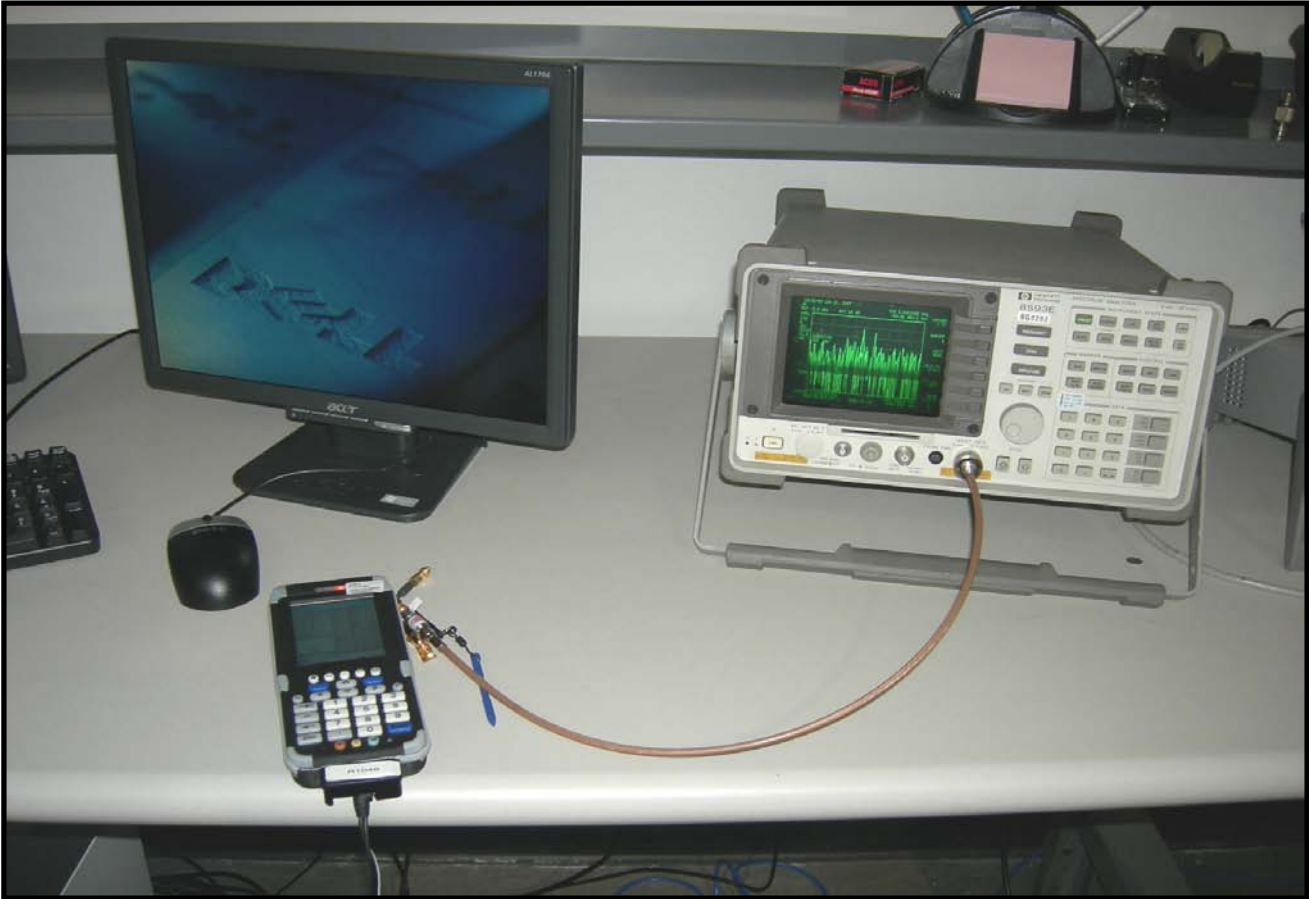
802.11(g) 54 Mbps, High Channel

Result: Pass

Value: 13.30 MHz

Limit: ≥ 500 KHz





Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

TEST EQUIPMENT					
Description	Manufacturer	Model	ID	Last Cal.	Interval
Oscilloscope	Agilent	DS06052A	TOK	3/9/2007	13
Signal Generator	Agilent	E8257D	TGX	1/25/2007	13
Attenuator		93459 3330A-6	AUF	1/22/2007	13
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	6/8/2007	13
Power Sensor	Gigatronics	80701A	SPL	9/19/2006	12
Power Meter	Gigatronics	8651A	SPM	9/19/2006	12
RF Detector	RLC Electronics	CR-133-R	ZZA	NCR	0

MEASUREMENT UNCERTAINTY

Measurement uncertainty is used to reflect the accuracy of the measured result as compared with its "true" or theoretically correct value. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4. In the case of transient tests our test equipment has been demonstrated by calibration to provide at least a 95% confidence that it complies with the test specification requirements. The measurement uncertainty for any test is available upon request.

TEST DESCRIPTION

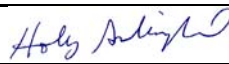
The peak output power was measured with the EUT set to low, medium, and high transmit frequencies. The EUT was transmitting at its maximum output power. The data rate of the radio was varied to determine the level that produced the highest output power.

The measurement was made using a direct connection between the RF output of the EUT and a RF detector diode. The DC output of the diode was measured with the oscilloscope. The signal generator, tuned to the transmit frequency, was then substituted for the EUT. The CW output of the signal generator was adjusted until the DC output of the RF detector diode match the peak level produced when connected to the EUT. To further reduce measurement error, the power meter and sensor were then used to measure the output power level of the signal generator.

De Facto EIRP Limit: Per 47 CFR 15.247 (b)(1-3), the EUT meets the de facto EIRP limit of +36dBm.

EMC

Output Power

EUT:	802.11 radio in CN3 Long Keyboard	Work Order:	ITRM0160
Serial Number:	None	Date:	08/15/07
Customer:	Intermec Technologies Corporation	Temperature:	25°C
Attendees:	None	Humidity:	36%
Project:	None	Barometric Pres.:	1024.1
Tested by:	Holly Ashkannejhad	Power:	120VAC/60Hz
		Job Site:	EV06
TEST SPECIFICATIONS		Test Method	
FCC 15.247 (DTS):2006		ANSI C63.4:2003 KDB No. 558074	
COMMENTS			
DEVIATIONS FROM TEST STANDARD			
Configuration #	3	Signature	

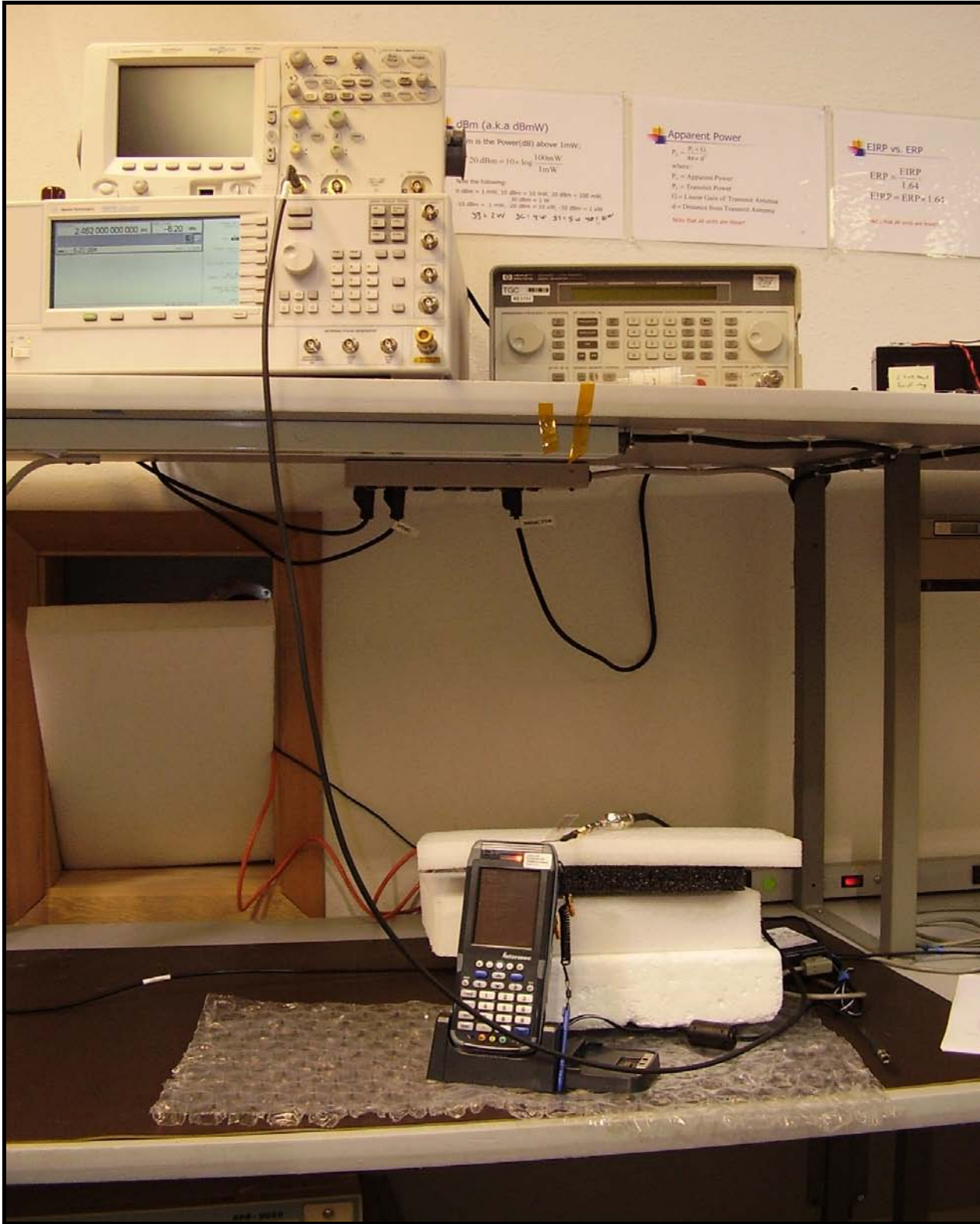
802.11(b)		1 Mbps						
Xmit Frequency (MHz)	Channel	DC on Scope (mV)	Sig Gen Output (dBm)	Power Meter (dBm)	Power Meter (mW)	Limit (W)	Result	
2412	1	-84	-6.4	19.78	95.06	1	Pass	
2439	6	-88	-6.1	20.07	101.62	1	Pass	
2462	11	-86	-6.2	19.97	99.31	1	Pass	

802.11(b)		11 Mbps						
Xmit Frequency (MHz)	Channel	DC on Scope (mV)	Sig Gen Output (dBm)	Power Meter (dBm)	Power Meter (mW)	Limit (W)	Result	
2412	1	-91	-5.9	20.27	106.41	1	Pass	
2439	6	-91	-5.9	20.27	106.41	1	Pass	
2462	11	-90	-6	20.17	103.99	1	Pass	

802.11(g)		6 Mbps						
Xmit Frequency (MHz)	Channel	DC on Scope (mV)	Sig Gen Output (dBm)	Power Meter (dBm)	Power Meter (mW)	Limit (W)	Result	
2412	1	-81	-6.6	19.58	90.78	1	Pass	
2439	6	-81	-6.6	19.58	90.78	1	Pass	
2462	11	-84	-6.4	19.78	95.06	1	Pass	

802.11(g)		36 Mbps						
Xmit Frequency (MHz)	Channel	DC on Scope (mV)	Sig Gen Output (dBm)	Power Meter (dBm)	Power Meter (mW)	Limit (W)	Result	
2412	1	-71	-7.5	18.68	73.79	1	Pass	
2439	6	-72	-7.4	18.78	75.51	1	Pass	
2462	11	-70	-7.6	18.58	72.11	1	Pass	

802.11(g)		54 Mbps						
Xmit Frequency (MHz)	Channel	DC on Scope (mV)	Sig Gen Output (dBm)	Power Meter (dBm)	Power Meter (mW)	Limit (W)	Result	
2412	1	-72	-7.4	18.78	75.51	1	Pass	
2439	6	-72	-7.4	18.78	75.51	1	Pass	
2462	11	-73	-7.3	18.88	77.27	1	Pass	



Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Spectrum Analyzer	Hewlett Packard	8593E	AAP	12/14/2006	13

MEASUREMENT UNCERTAINTY

Measurement uncertainty is used to reflect the accuracy of the measured result as compared with its "true" or theoretically correct value. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4. In the case of transient tests our test equipment has been demonstrated by calibration to provide at least a 95% confidence that it complies with the test specification requirements. The measurement uncertainty for any test is available upon request.

TEST DESCRIPTION

The requirements of FCC 15.247(d) for emissions at least 20dB below the carrier in any 100kHz bandwidth outside the allowable band was measured with the EUT set to low and high transmit frequencies. The measurement was made using a direct connection between the RF output of the EUT and the spectrum analyzer. The EUT was transmitting at its maximum data rate using direct sequence modulation. The channels closest to the band edges were selected. The spectrum was scanned across each band edge from 10 MHz below the band edge to 10 MHz above the band edge.

EMC

BAND EDGE COMPLIANCE

EUT: CN3 Long Keyboard	Work Order: ITRM0160
Serial Number: 12090700022	Date: 06/21/07
Customer: Intermec Technologies Corporation	Temperature: 23 C°
Attendees: None	Humidity: 42%
Project: None	Barometric Pres.: 30.03
Tested by: Jeremiah Darden	Power: 120VAC/60Hz
	Job Site: OC13

TEST SPECIFICATIONS		Test Method
FCC 15.247 (DTS):2006	ANSI C63.4:2003 KDB No. 558074	

COMMENTS
802.11 Mode

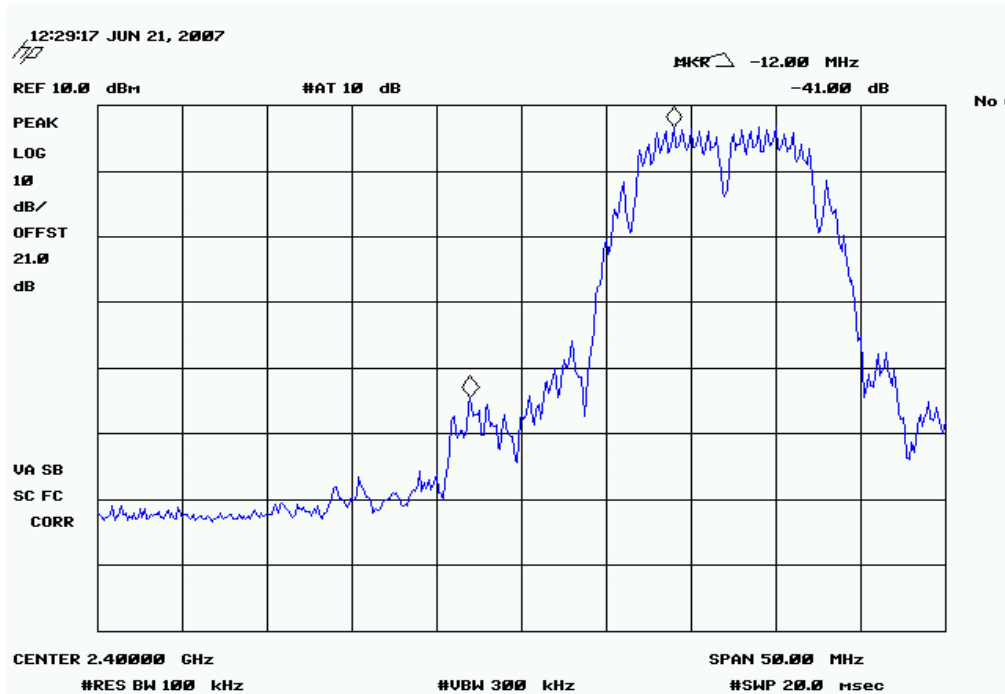
DEVIATIONS FROM TEST STANDARD

Configuration #	1	Signature 
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		Value	Limit	Results
802.11(b) 1 Mbps	Low Channel	-41.00 dBc	<= 20 dBc	Pass
	High Channel	-54.41 dBc	<= 20 dBc	Pass
802.11(b) 11 Mbps	Low Channel	-45.14 dBc	<= 20 dBc	Pass
	High Channel	-54.41 dBc	<= 20 dBc	Pass
802.11(g) 6 Mbps	Low Channel	-37.59 dBc	<= 20 dBc	Pass
	High Channel	-43.39 dBc	<= 20 dBc	Pass
802.11(g) 36 Mbps	Low Channel	-38.65 dBc	<= 20 dBc	Pass
	High Channel	-46.86 dBc	<= 20 dBc	Pass
802.11(g) 54 Mbps	Low Channel	-37.84 dBc	<= 20 dBc	Pass
	High Channel	-43.44 dBc	<= 20 dBc	Pass

BAND EDGE COMPLIANCE

802.11(b) 1 Mbps, Low Channel
Result: Pass **Value:** -41.00 dBc **Limit:** <= 20 dBc

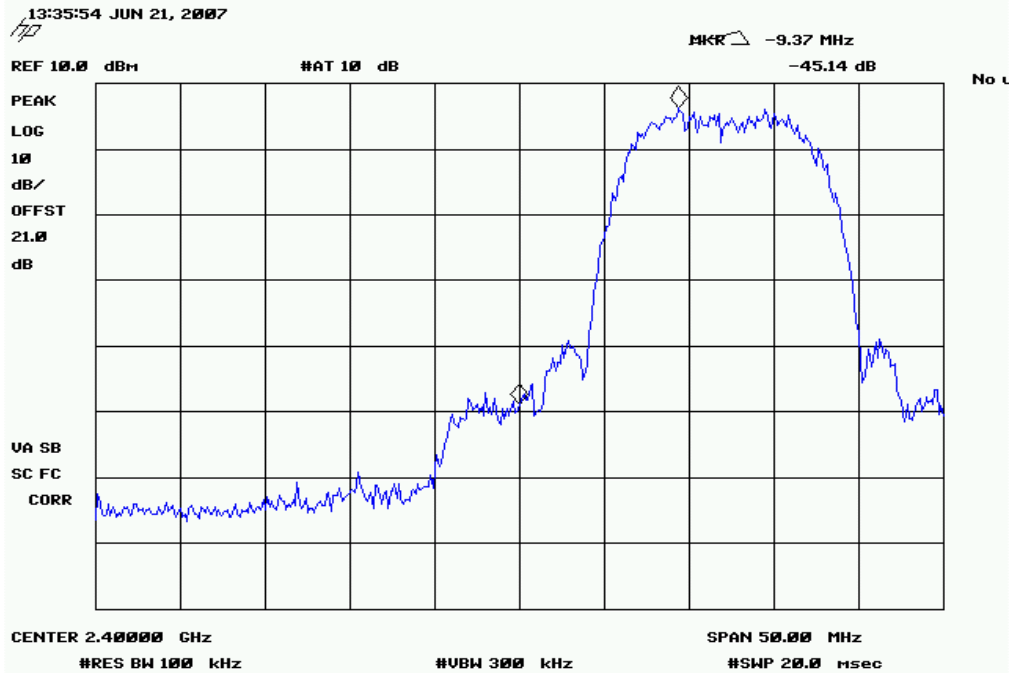


802.11(b) 1 Mbps, High Channel
Result: Pass **Value:** -54.41 dBc **Limit:** <= 20 dBc

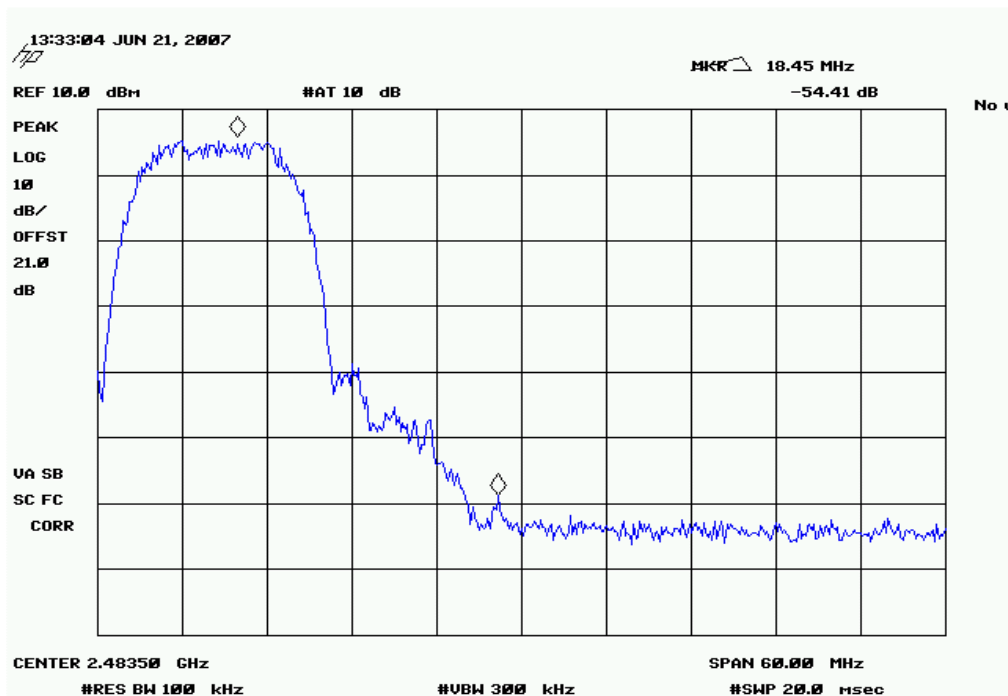


BAND EDGE COMPLIANCE

802.11(b) 11 Mbps, Low Channel
Result: Pass **Value:** -45.14 dBc **Limit:** <= 20 dBc

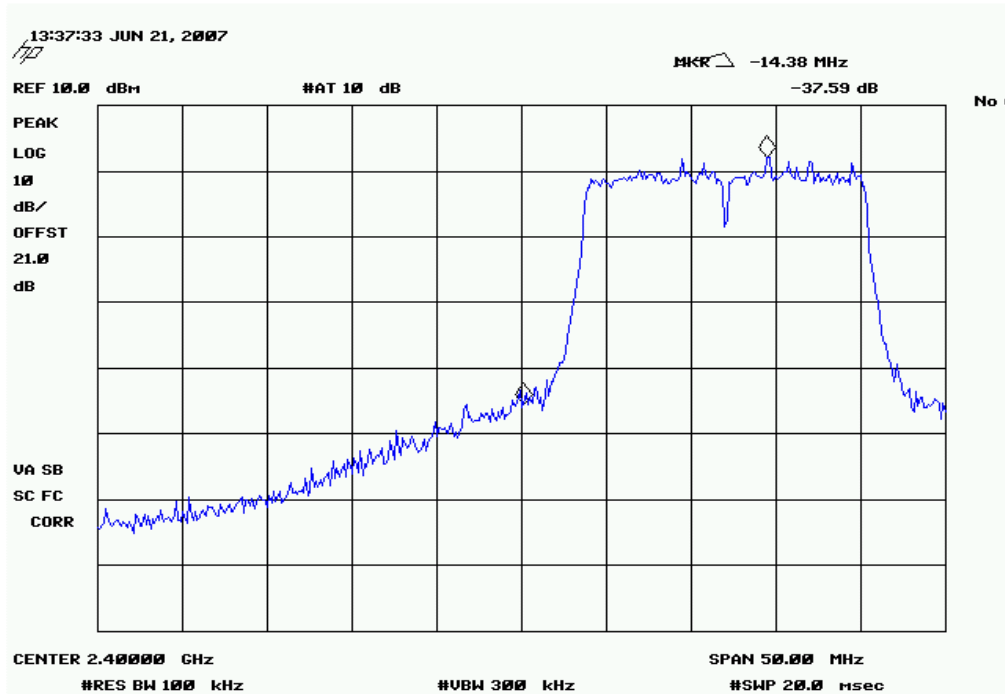


802.11(b) 11 Mbps, High Channel
Result: Pass **Value:** -54.41 dBc **Limit:** <= 20 dBc

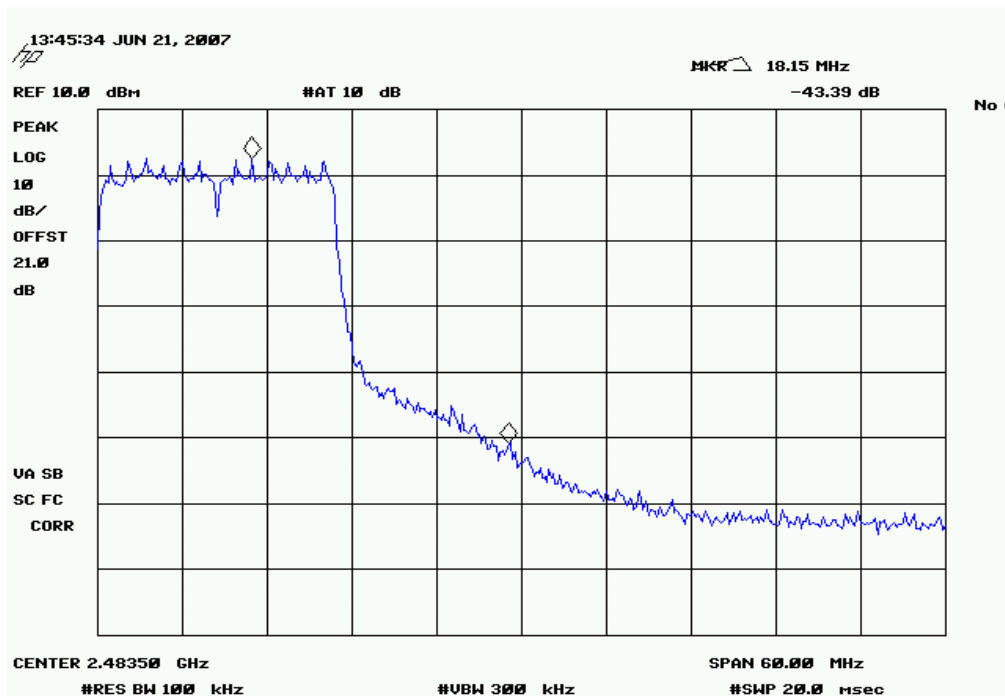


BAND EDGE COMPLIANCE

802.11(g) 6 Mbps, Low Channel		
Result: Pass	Value: -37.59 dBc	Limit: <= 20 dBc



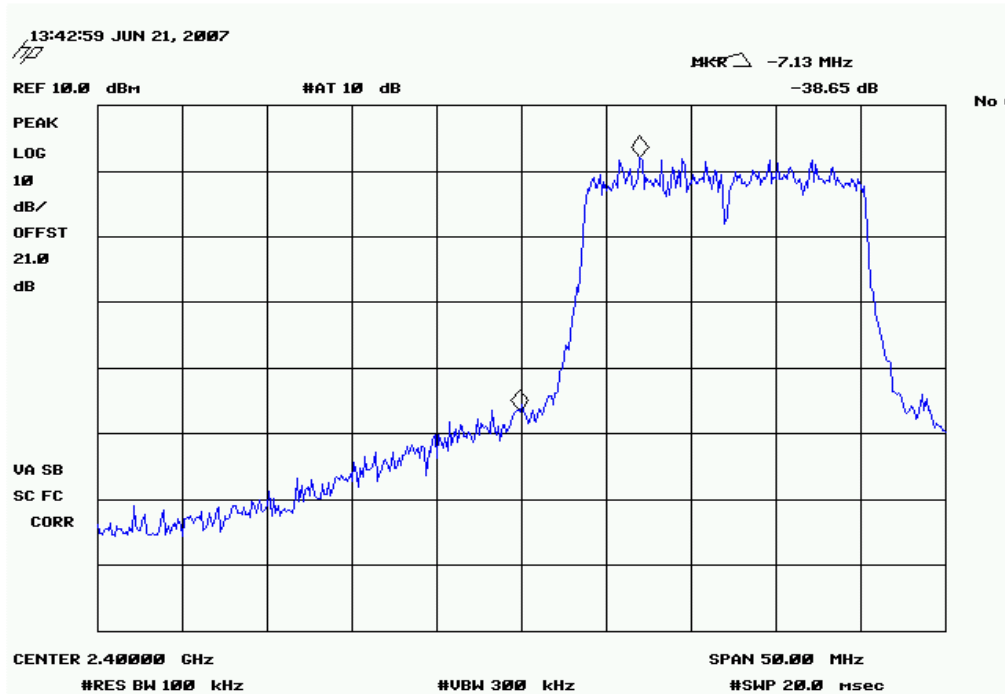
802.11(g) 6 Mbps, High Channel		
Result: Pass	Value: -43.39 dBc	Limit: <= 20 dBc



BAND EDGE COMPLIANCE

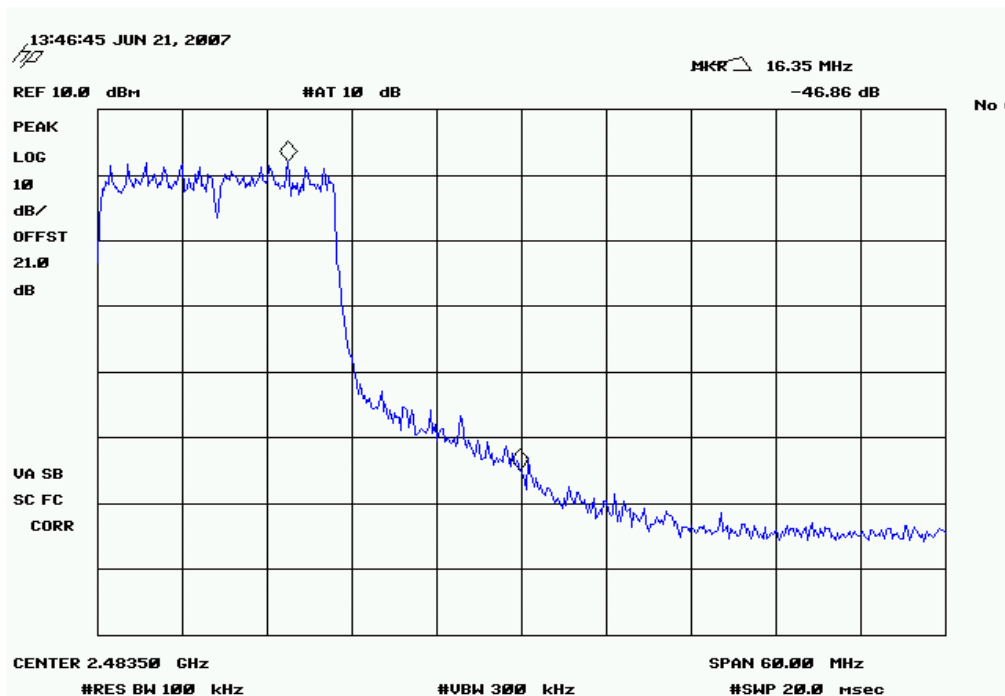
802.11(g) 36 Mbps, Low Channel

Result: Pass **Value:** -38.65 dBc **Limit:** <= 20 dBc



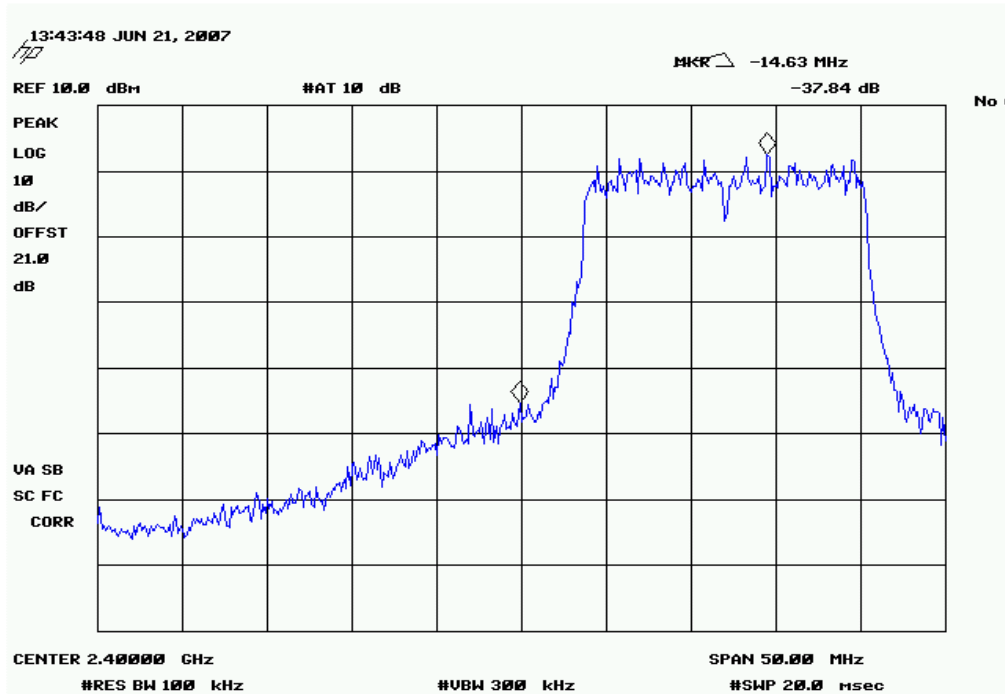
802.11(g) 36 Mbps, High Channel

Result: Pass **Value:** -46.86 dBc **Limit:** <= 20 dBc

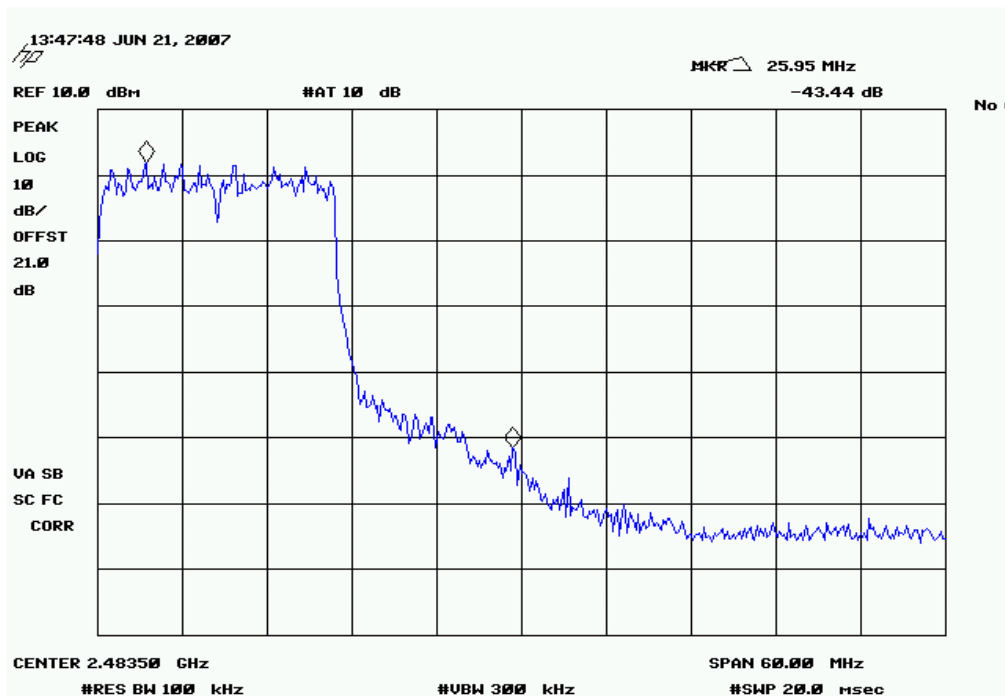


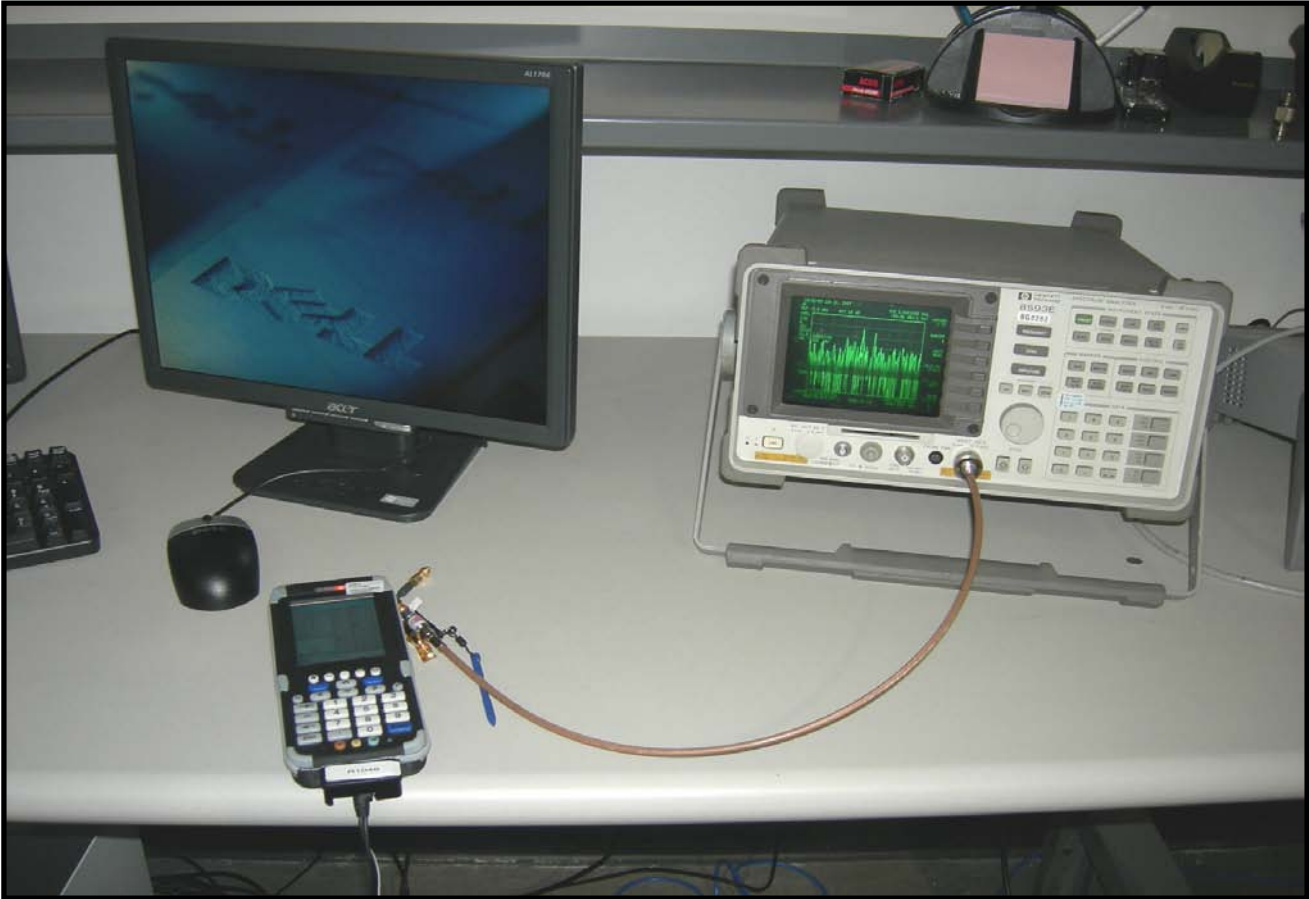
BAND EDGE COMPLIANCE

802.11(g) 54 Mbps, Low Channel
Result: Pass **Value:** -37.84 dBc **Limit:** <= 20 dBc



802.11(g) 54 Mbps, High Channel
Result: Pass **Value:** -43.44 dBc **Limit:** <= 20 dBc





Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Spectrum Analyzer	Agilent	E4446A	AAQ	1/18/2007	13

MEASUREMENT UNCERTAINTY

Measurement uncertainty is used to reflect the accuracy of the measured result as compared with its "true" or theoretically correct value. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4. In the case of transient tests our test equipment has been demonstrated by calibration to provide at least a 95% confidence that it complies with the test specification requirements. The measurement uncertainty for any test is available upon request.

TEST DESCRIPTION

The spurious RF conducted emissions were measured with the EUT set to low, medium, and high transmit frequencies. The measurements were made using a direct connection between the RF output of the EUT and the spectrum analyzer. The EUT was transmitting at its maximum data rate in a no hop mode. For each transmit frequency, the spectrum was scanned throughout the specified frequency.

EMC

Spurious Conducted Emissions

EUT: CN3 Long Keyboard	Work Order: ITRM0160
Serial Number: 12090700027	Date: 07/16/07
Customer: Intermec Technologies Corporation	Temperature: 22°C
Attendees: None	Humidity: 42%
Project: None	Barometric Pres.: 29.98
Tested by: Jaemi Suh	Power: 120VAC/60Hz
	Job Site: OC10

TEST SPECIFICATIONS	Test Method
FCC 15.247 (DTS):2006	ANSI C63.4:2003 KDB No. 558074

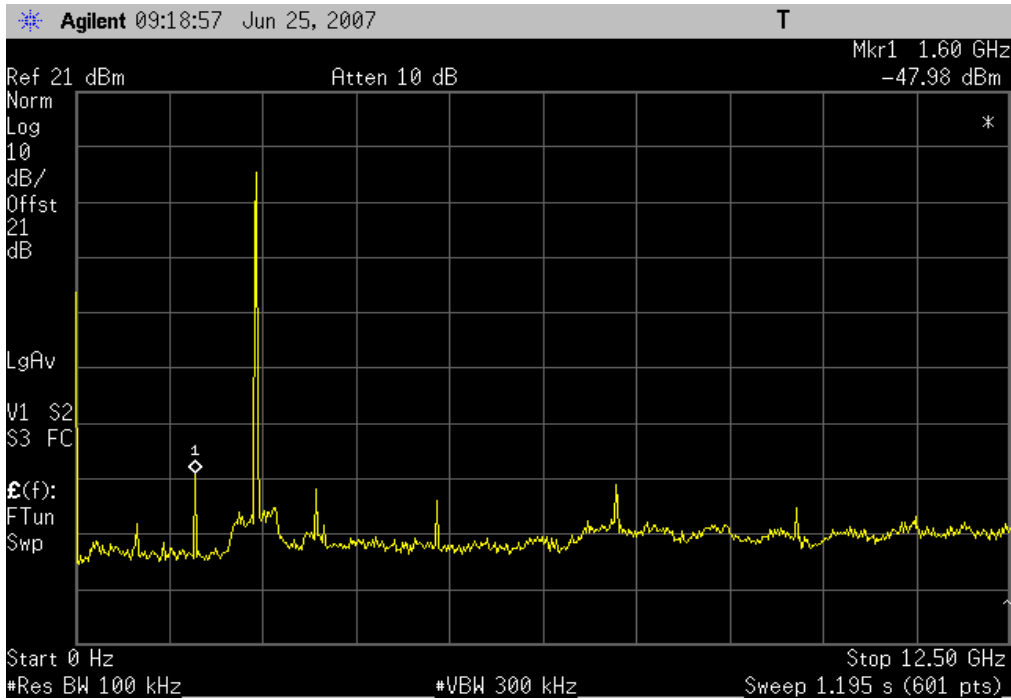
COMMENTS
802.11 b/g Mode.

DEVIATIONS FROM TEST STANDARD

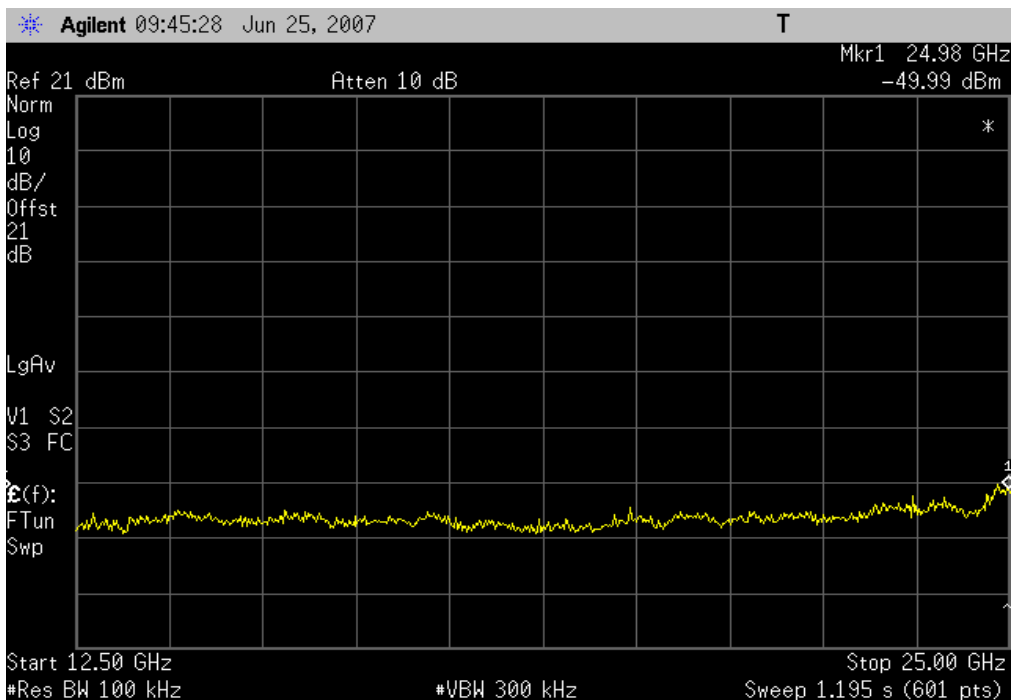
Configuration #	1	Signature 
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		Value	Limit	Results
802.11 b/g, 1 Mbps	Low Channel			
	1 - 12 GHz	- 47.98 dBc	≤ - 20 dBc	Pass
	12 - 25 GHz	- 49.99 dBc	≤ - 20 dBc	Pass
	High Channel			
	1 - 12 GHz	- 48.60 dBc	≤ - 20 dBc	Pass
	12 - 25 GHz	- 49.50 dBc	≤ - 20 dBc	Pass
802.11 b/g, 11 Mbps	Low Channel			
	1 - 12 GHz	- 48.57 dBc	≤ - 20 dBc	Pass
	12 - 25 GHz	- 49.22 dBc	≤ - 20 dBc	Pass
	High Channel			
	1 - 12 GHz	- 49.58 dBc	≤ - 20 dBc	Pass
	12 - 25 GHz	- 50.40 dBc	≤ - 20 dBc	Pass
802.11 b/g, 6 Mbps	Low Channel			
	1 - 12 GHz	- 50.82 dBc	≤ - 20 dBc	Pass
	12 - 25 GHz	- 48.09dBc	≤ - 20 dBc	Pass
	High Channel			
	1 - 12 GHz	- 51.17 dBc	≤ - 20 dBc	Pass
	12 - 25 GHz	- 51.16 dBc	≤ - 20 dBc	Pass
802.11 b/g, 36 Mbps	Low Channel			
	1 - 12 GHz	- 51.71 dBc	≤ - 20 dBc	Pass
	12 - 25 GHz	- 50.77 dBc	≤ - 20 dBc	Pass
	High Channel			
	1 - 12 GHz	- 50.84 dBc	≤ - 20 dBc	Pass
	12 - 25 GHz	- 50.68 dBc	≤ - 20 dBc	Pass
802.11 b/g, 54 Mbps	Low Channel			
	1 - 12 GHz	- 50.91 dBc	≤ - 20 dBc	Pass
	12 - 25 GHz	- 49.83 dBc	≤ - 20 dBc	Pass
	High Channel			
	1 - 12 GHz	- 52.28 dBc	≤ - 20 dBc	Pass
	12 - 25 GHz	- 50.68 dBc	≤ - 20 dBc	Pass

802.11 b/g, 1 Mbps, Low Channel, 1 - 12 GHz
Result: Pass **Value:** - 47.98 dBc **Limit:** ≤ - 20 dBc



802.11 b/g, 1 Mbps, Low Channel, 12 - 25 GHz
Result: Pass **Value:** - 49.99 dBc **Limit:** ≤ - 20 dBc

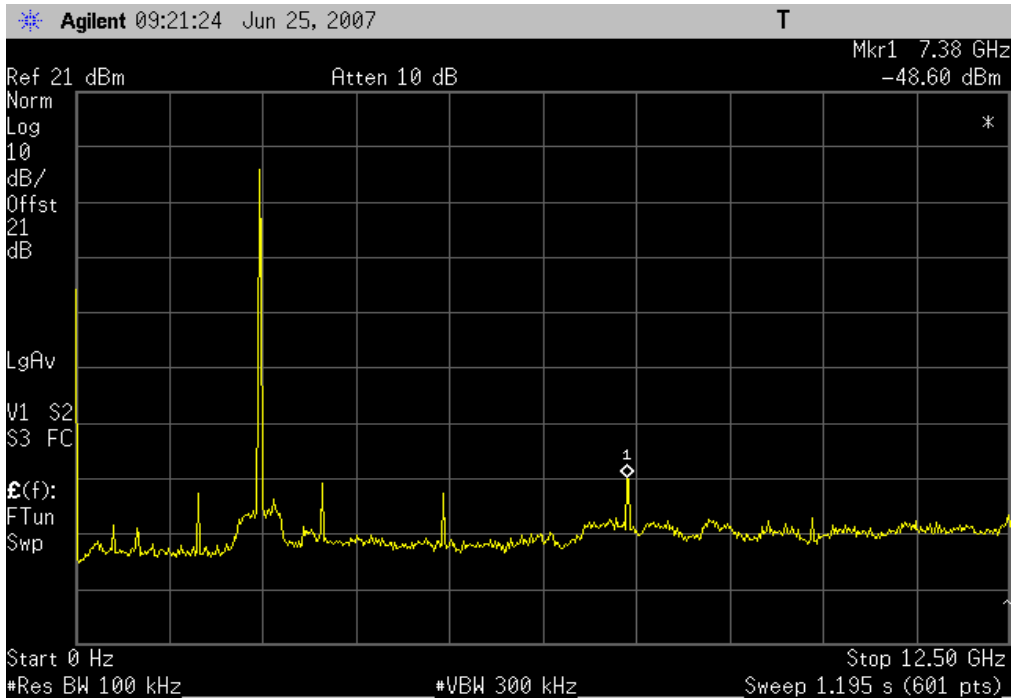


802.11 b/g, 1 Mbps, High Channel, 1 - 12 GHz

Result: Pass

Value: - 48.60 dBc

Limit: ≤ - 20 dBc

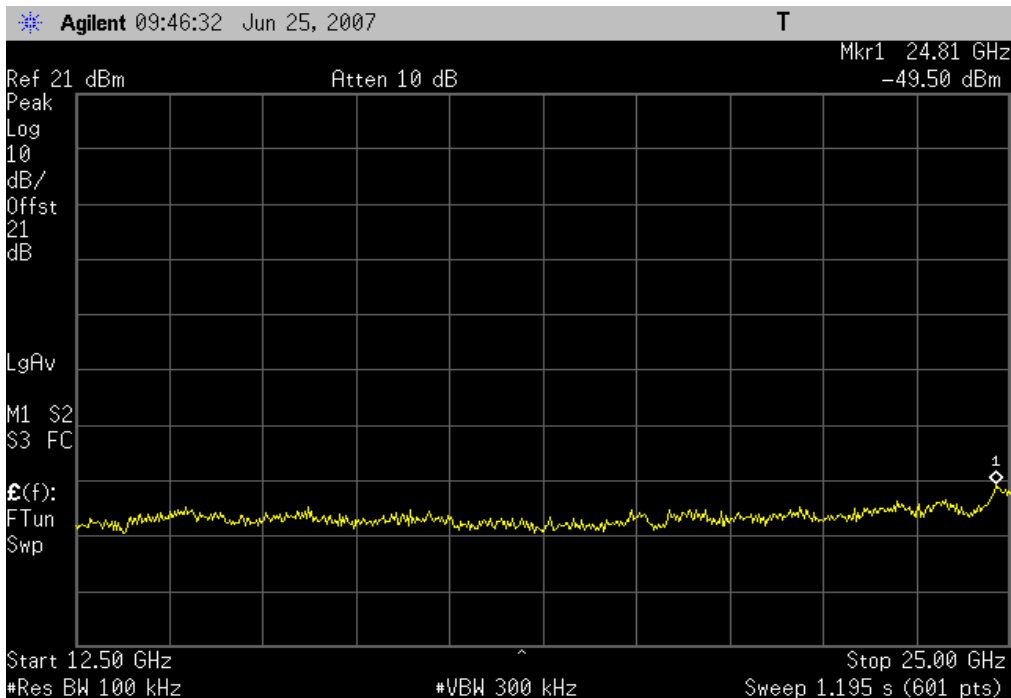


802.11 b/g, 1 Mbps, High Channel, 12 - 25 GHz

Result: Pass

Value: - 49.50 dBc

Limit: ≤ - 20 dBc

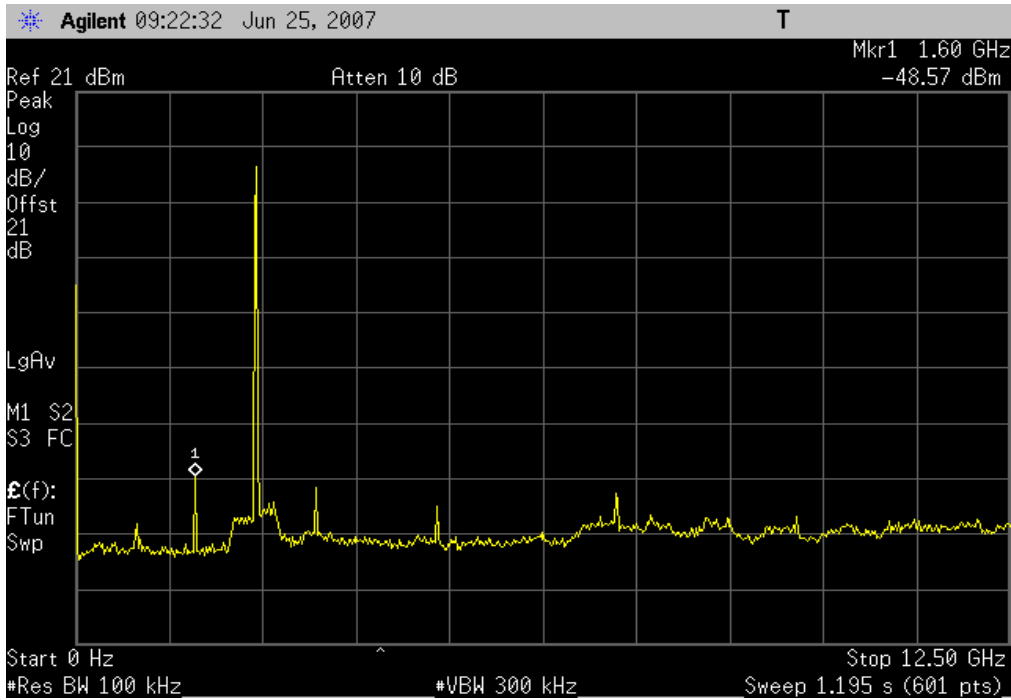


802.11 b/g, 11 Mbps, Low Channel, 1 - 12 GHz

Result: Pass

Value: -48.57 dBc

Limit: ≤ -20 dBc

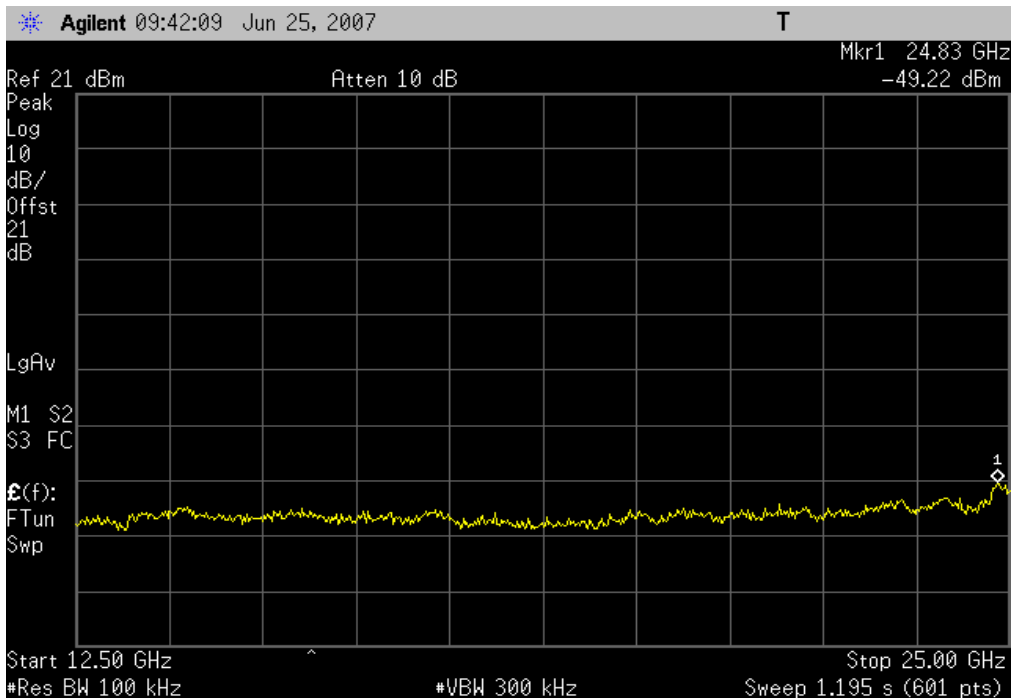


802.11 b/g, 11 Mbps, Low Channel, 12 - 25 GHz

Result: Pass

Value: -49.22 dBc

Limit: ≤ -20 dBc

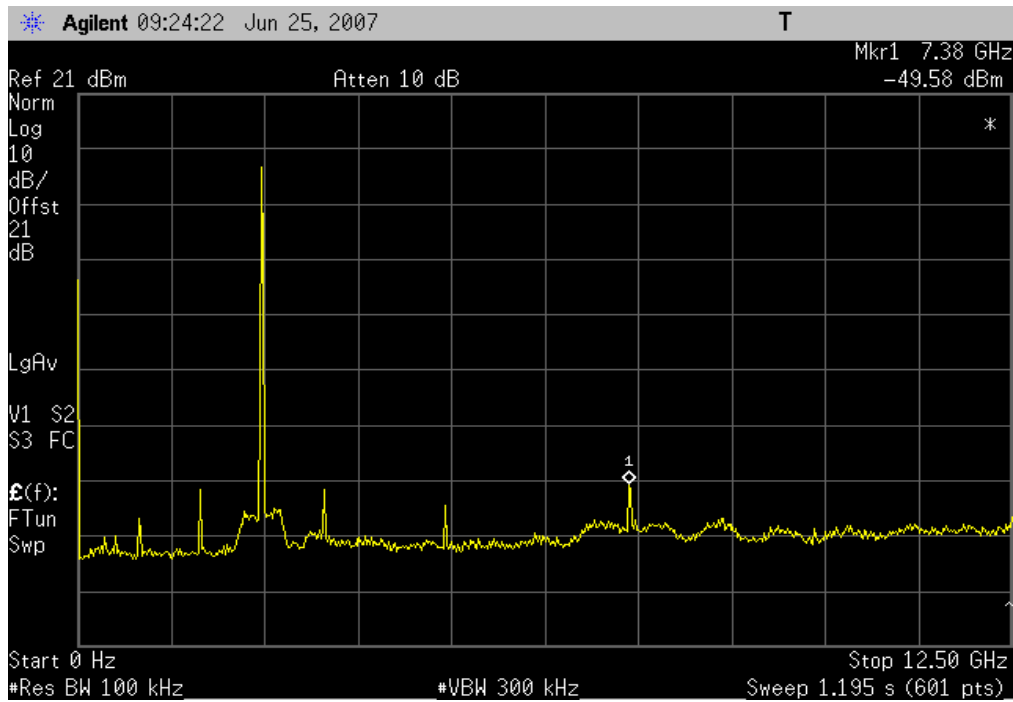


802.11 b/g, 11 Mbps, High Channel, 1 - 12 GHz

Result: Pass

Value: -49.58 dBc

Limit: ≤ -20 dBc

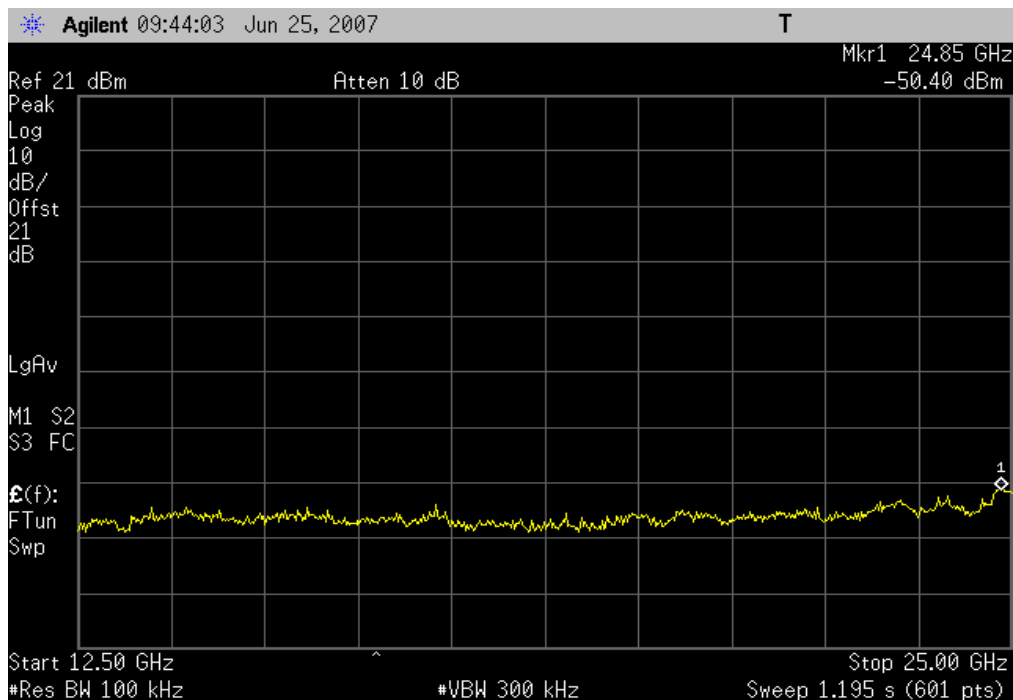


802.11 b/g, 11 Mbps, High Channel, 12 - 25 GHz

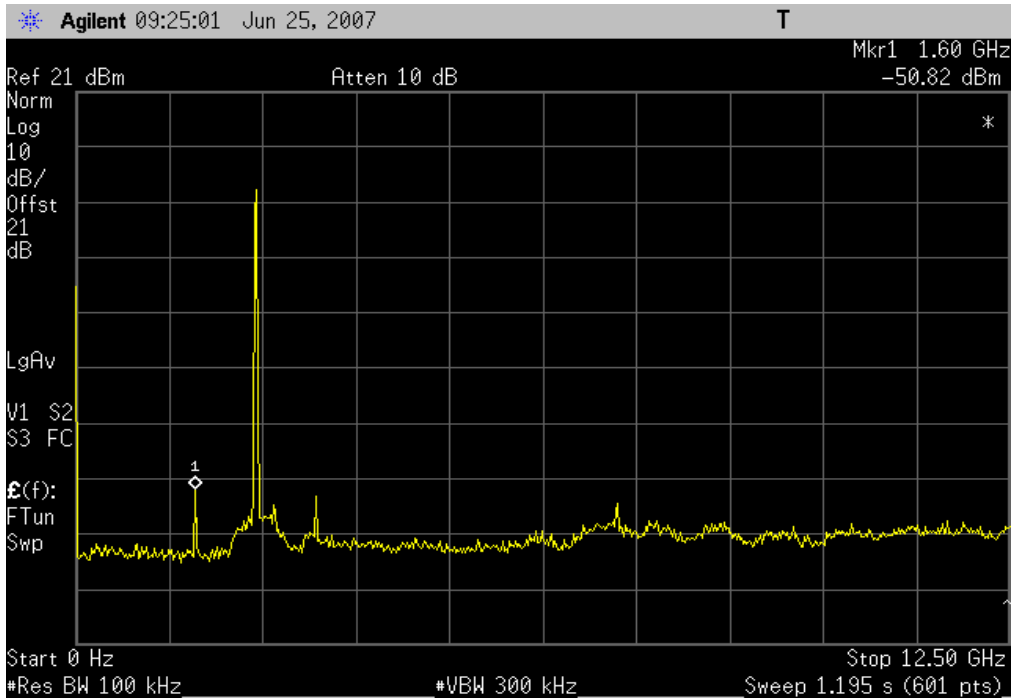
Result: Pass

Value: -50.40 dBc

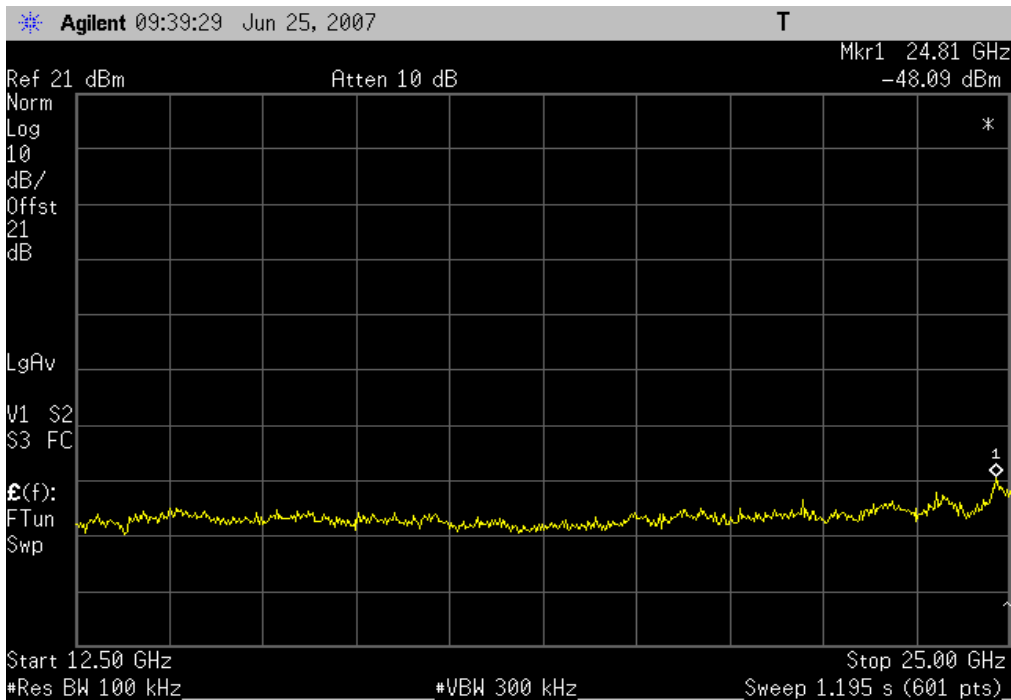
Limit: ≤ -20 dBc



802.11 b/g, 6 Mbps, Low Channel, 1 - 12 GHz
Result: Pass **Value:** - 50.82 dBc **Limit:** ≤ - 20 dBc



802.11 b/g, 6 Mbps, Low Channel, 12 - 25 GHz
Result: Pass **Value:** - 48.09dBc **Limit:** ≤ - 20 dBc

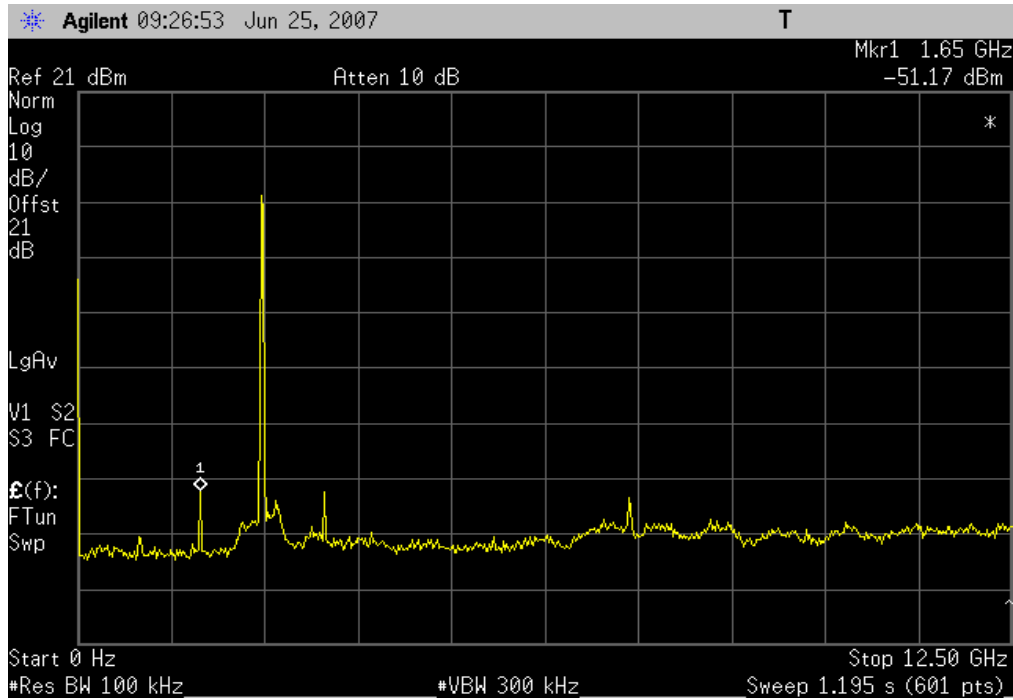


802.11 b/g, 6 Mbps, High Channel, 1 - 12 GHz

Result: Pass

Value: - 51.17 dBc

Limit: ≤ - 20 dBc

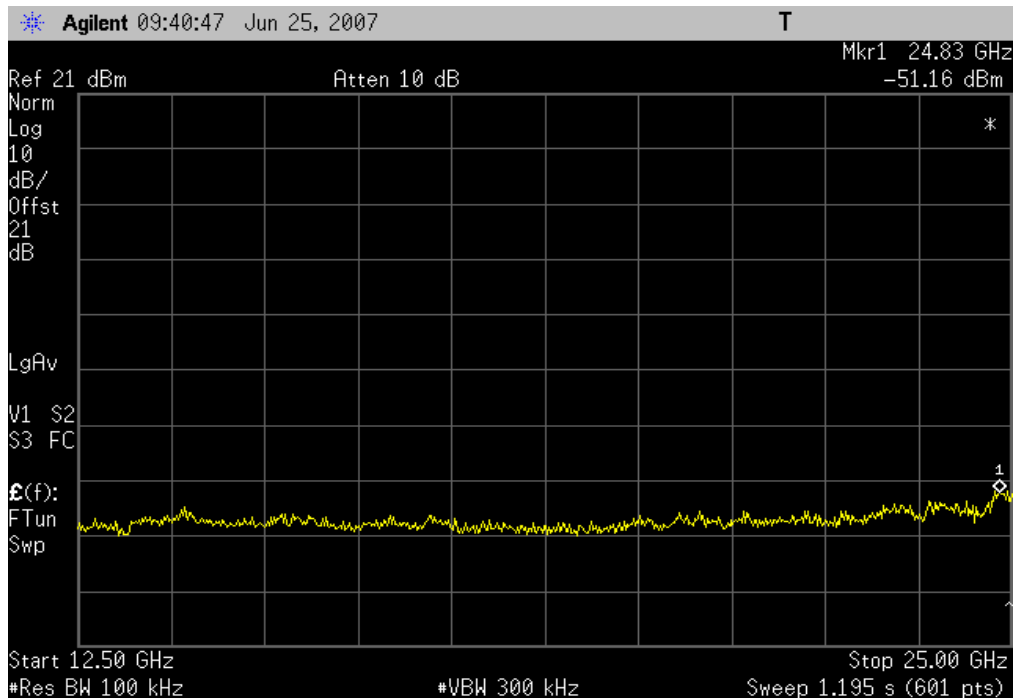


802.11 b/g, 6 Mbps, High Channel, 12 - 25 GHz

Result: Pass

Value: - 51.16 dBc

Limit: ≤ - 20 dBc

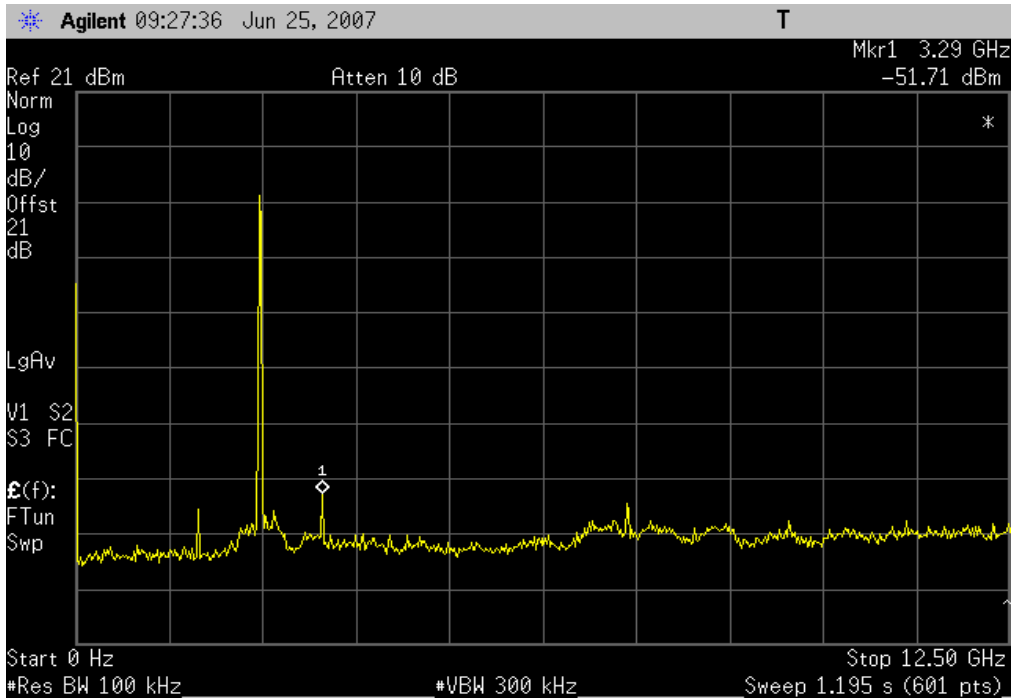


802.11 b/g, 36 Mbps, Low Channel, 1 - 12 GHz

Result: Pass

Value: -51.71 dBc

Limit: ≤ -20 dBc

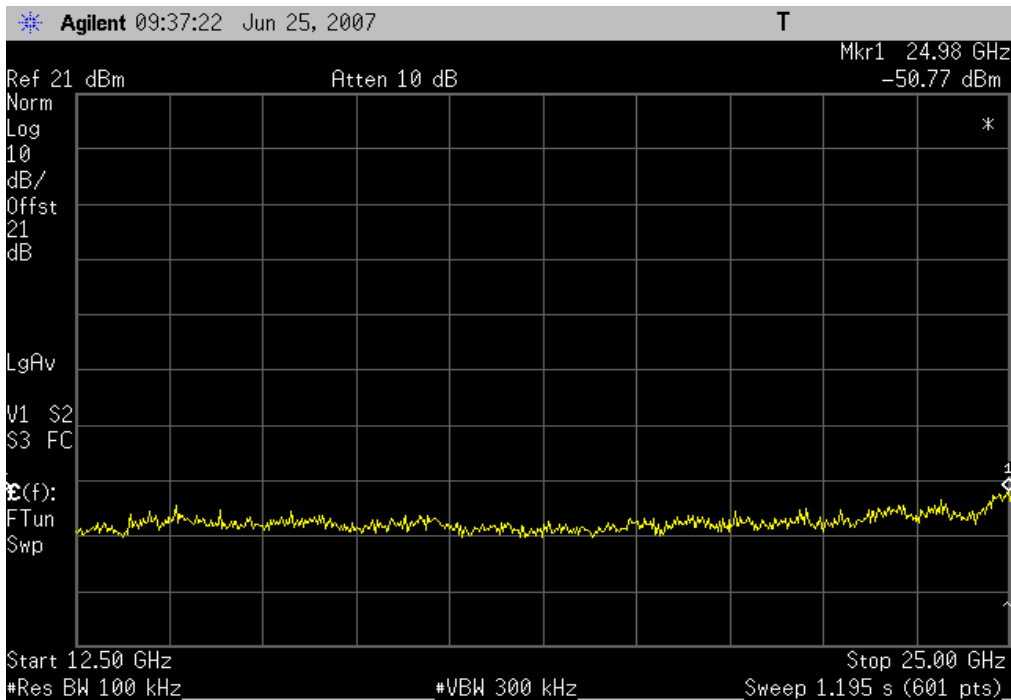


802.11 b/g, 36 Mbps, Low Channel, 12 - 25 GHz

Result: Pass

Value: -50.77 dBc

Limit: ≤ -20 dBc

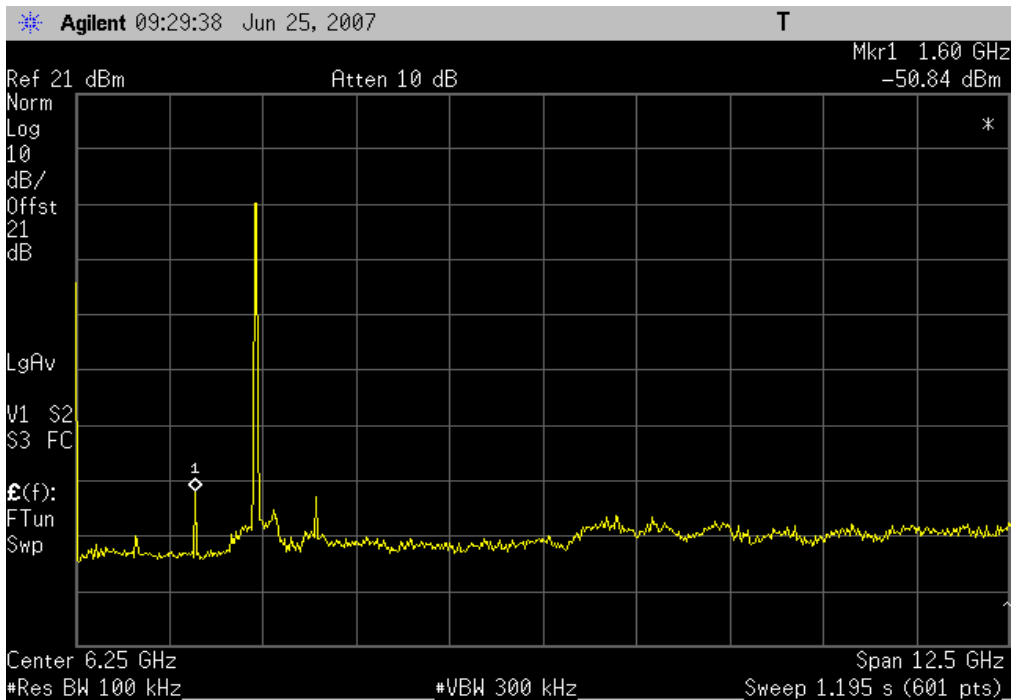


802.11 b/g, 36 Mbps, High Channel, 1 - 12 GHz

Result: Pass

Value: - 50.84 dBc

Limit: \leq - 20 dBc

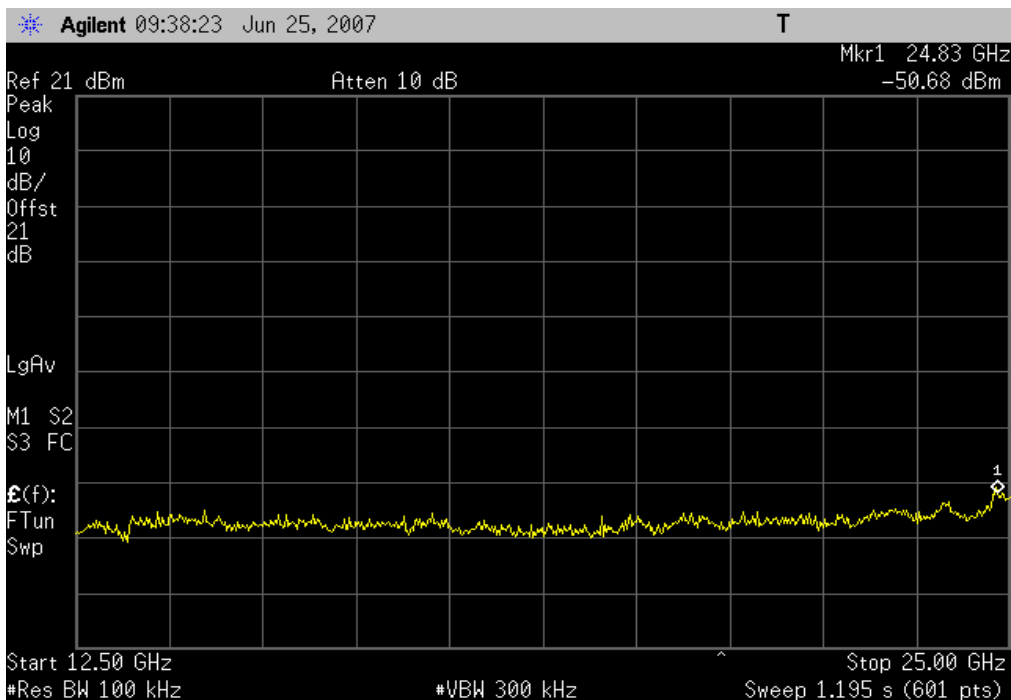


802.11 b/g, 36 Mbps, High Channel, 12 - 25 GHz

Result: Pass

Value: - 50.68 dBc

Limit: \leq - 20 dBc

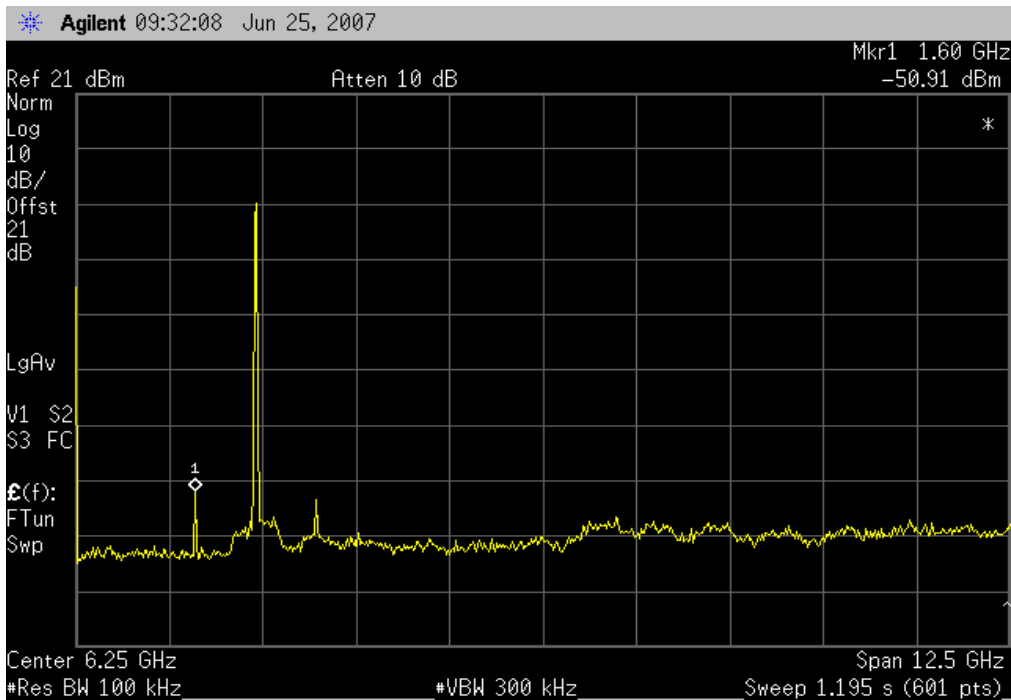


802.11 b/g, 54 Mbps, Low Channel, 1 - 12 GHz

Result: Pass

Value: - 50.91 dBc

Limit: ≤ - 20 dBc

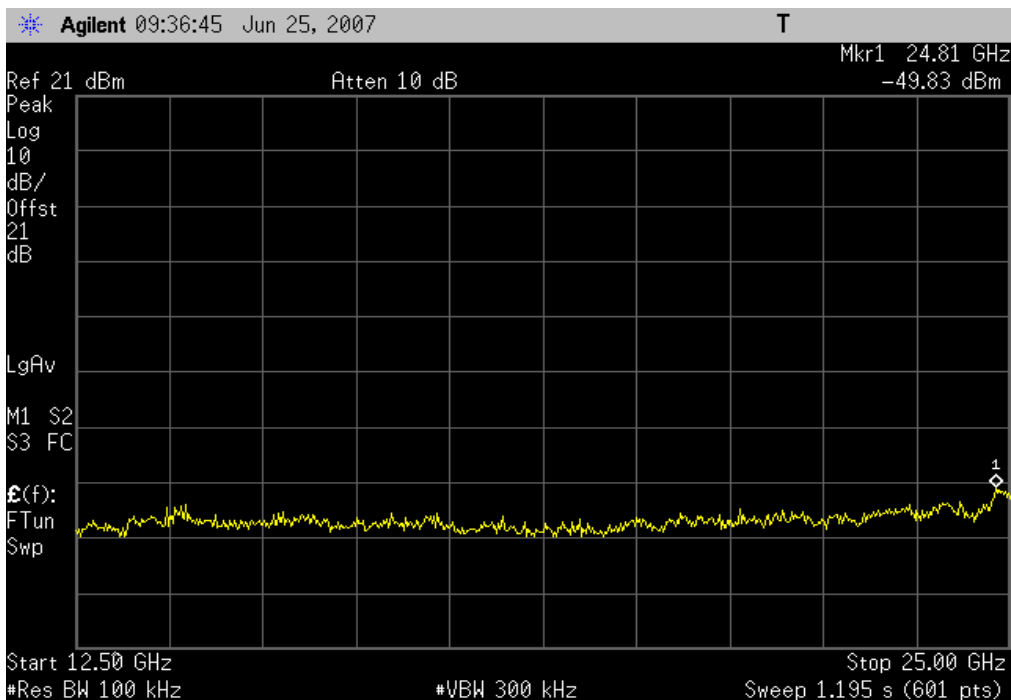


802.11 b/g, 54 Mbps, Low Channel, 12 - 25 GHz

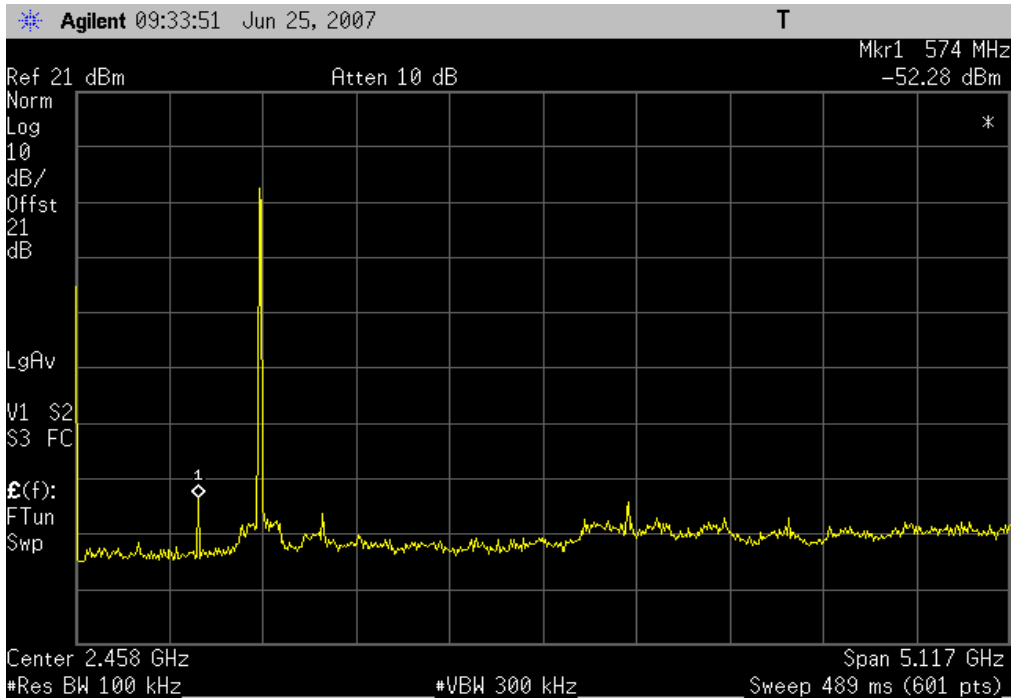
Result: Pass

Value: - 49.83 dBc

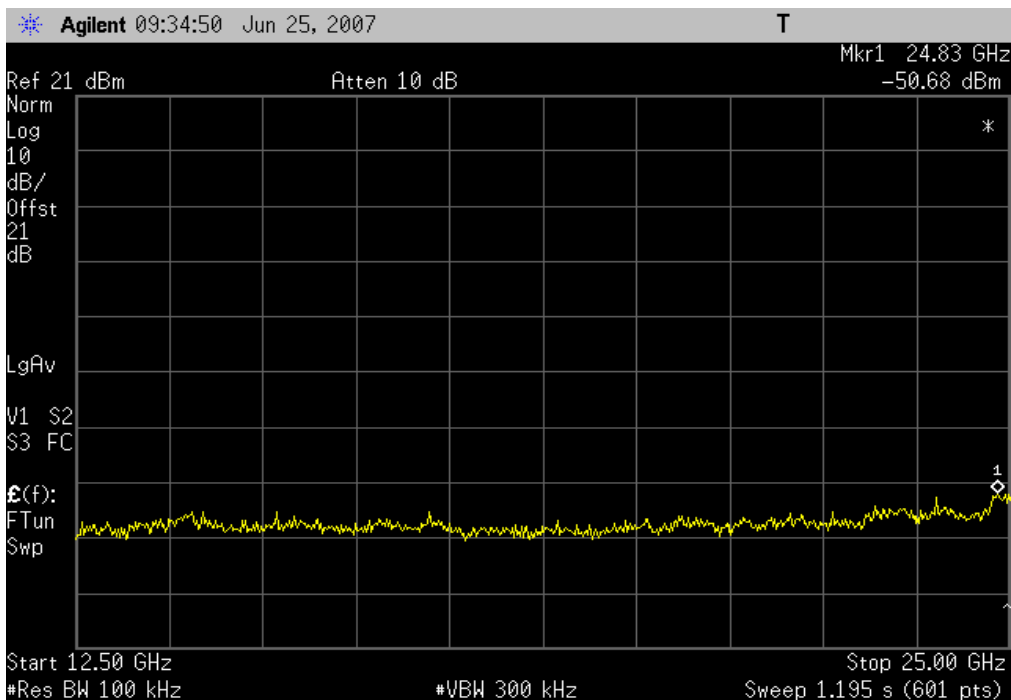
Limit: ≤ - 20 dBc



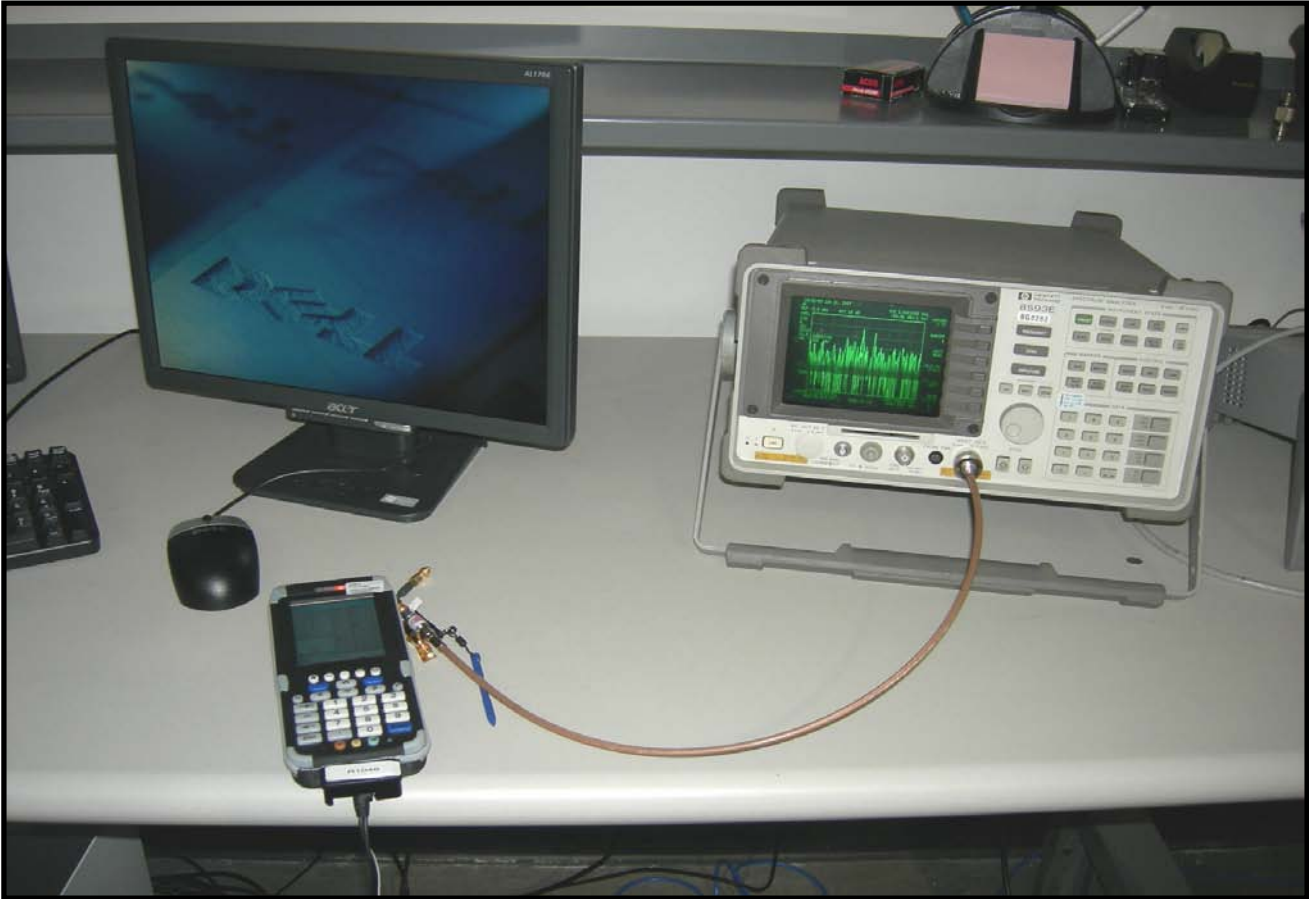
802.11 b/g, 54 Mbps, High Channel, 1 - 12 GHz
Result: Pass **Value:** - 52.28 dBc **Limit:** ≤ - 20 dBc



802.11 b/g, 54 Mbps, High Channel, 12 - 25 GHz
Result: Pass **Value:** - 50.68 dBc **Limit:** ≤ - 20 dBc



Spurious Conducted Emissions



Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Spectrum Analyzer	Hewlett Packard	8593E	AAP	12/14/2006	13

MEASUREMENT UNCERTAINTY

Measurement uncertainty is used to reflect the accuracy of the measured result as compared with its "true" or theoretically correct value. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4. In the case of transient tests our test equipment has been demonstrated by calibration to provide at least a 95% confidence that it complies with the test specification requirements. The measurement uncertainty for any test is available upon request.

TEST DESCRIPTION

The peak power spectral density measurements were measured with the EUT set to low, mid, and high transmit frequencies. The measurement was made using a direct connection between the RF output of the EUT and the spectrum analyzer. The EUT was transmitting at its maximum data rate using direct sequence modulation. Per the procedure outlined in FCC 97-114, the spectrum analyzer was used as follows:

The emission peak(s) were located and zoom in on within the passband. The resolution bandwidth was set to 3 kHz, the video bandwidth was set to greater than or equal to the resolution bandwidth. The sweep speed was set equal to the span divided by 3 kHz (sweep = (SPAN/3 kHz)). For example, given a span of 1.5 MHz, the sweep should be $1.5 \times 10^6 \div 3 \times 10^3 = 500$ seconds. External attenuation was used and added to the reading. The following FCC procedure was used for modifying the power spectral density measurements:

"If the spectrum line spacing cannot be resolved on the available spectrum analyzer, the noise density function on most modern conventional spectrum analyzers will directly measure the noise power density normalized to a 1 Hz noise power bandwidth. Add 34.8 dB for correction to 3 kHz."

EMC

POWER SPECTRAL DENSITY

EUT: CN3 Long Keyboard	Work Order: ITRM0160
Serial Number: 12090700022	Date: 06/21/07
Customer: Intermec Technologies Corporation	Temperature: 23 C°
Attendees: None	Humidity: 48%
Project: None	Barometric Pres.: 30.03
Tested by: Jeremiah Darden	Power: 120VAC/60Hz
	Job Site: OC13

TEST SPECIFICATIONS		Test Method
FCC 15.247 (DTS):2006	ANSI C63.4:2003 KDB No. 558074	

COMMENTS
802.11 Mode

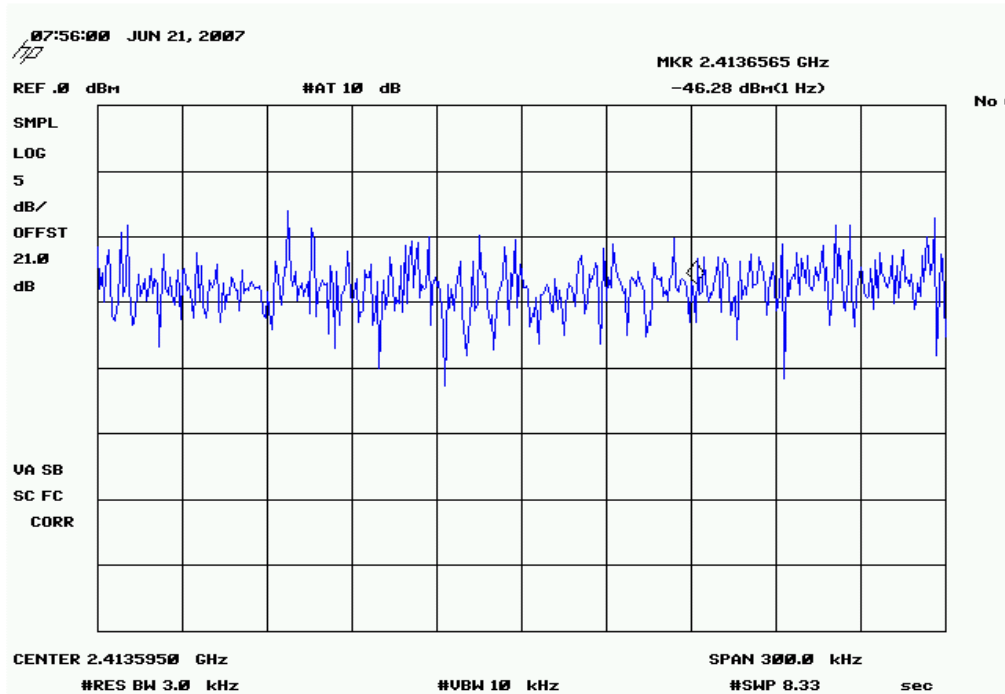
DEVIATIONS FROM TEST STANDARD

Configuration #	1	Signature 
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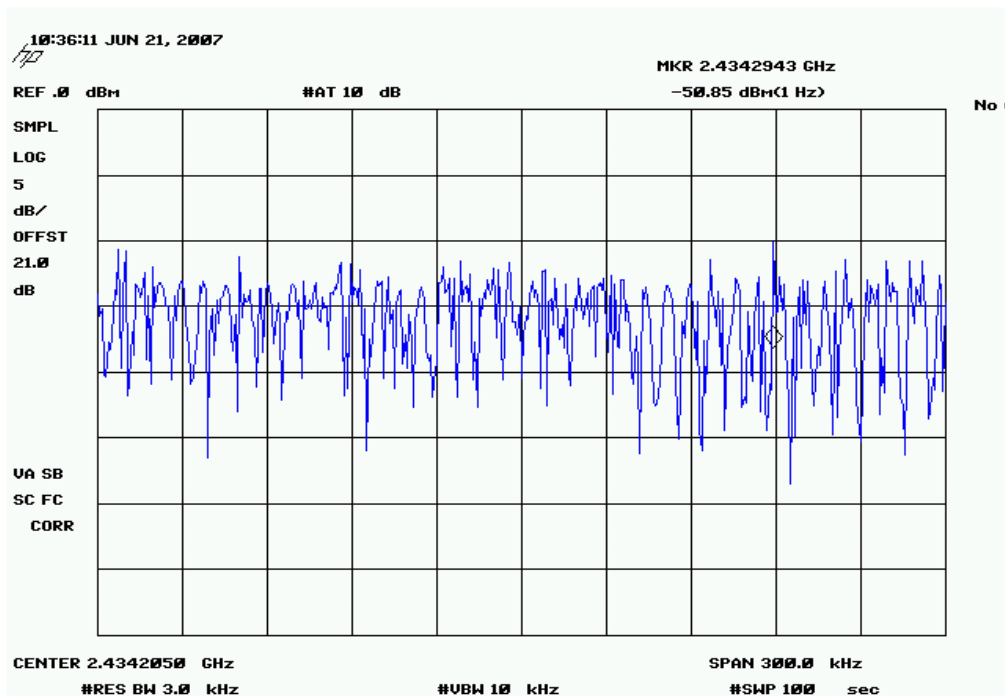
		Value	Limit	Results
802.11(b) 1 Mbps	Low Channel	-11.48 dBm / 3kHz	8 dBm / 3kHz	Pass
	Mid Channel	-16.05 dBm / 3 kHz	8 dBm / 3kHz	Pass
	High Channel	-13.53 dBm / 3 kHz	8 dBm / 3kHz	Pass
802.11(b) 11 Mbps	Low Channel	-12.51 dBm / 3 kHz	8 dBm / 3kHz	Pass
	Mid Channel	-13.92 dBm / 3 kHz	8 dBm / 3kHz	Pass
	High Channel	-14.38 dBm / 3 kHz	8 dBm / 3kHz	Pass
802.11(g) 6 Mbps	Low Channel	-19.86 dBm / 3 kHz	8 dBm / 3kHz	Pass
	Mid Channel	-18.10 dBm / 3 kHz	8 dBm / 3kHz	Pass
	High Channel	-15.73 dBm / 3 kHz	8 dBm / 3kHz	Pass
802.11(g) 36 Mbps	Low Channel	-17.03 dBm / 3 kHz	8 dBm / 3kHz	Pass
	Mid Channel	-21.17 dBm / 3 kHz	8 dBm / 3kHz	Pass
	High Channel	-21.43 dBm / 3 kHz	8 dBm / 3kHz	Pass
802.11(g) 54 Mbps	Low Channel	-24.71 dBm / 3 kHz	8 dBm / 3kHz	Pass
	Mid Channel	-27.44 dBm / 3 kHz	8 dBm / 3kHz	Pass
	High Channel	-24.12 dBm / 3 kHz	8 dBm / 3kHz	Pass

POWER SPECTRAL DENSITY

802.11(b) 1 Mbps, Low Channel
Result: Pass **Value:** -11.48 dBm / 3kHz **Limit:** 8 dBm / 3kHz

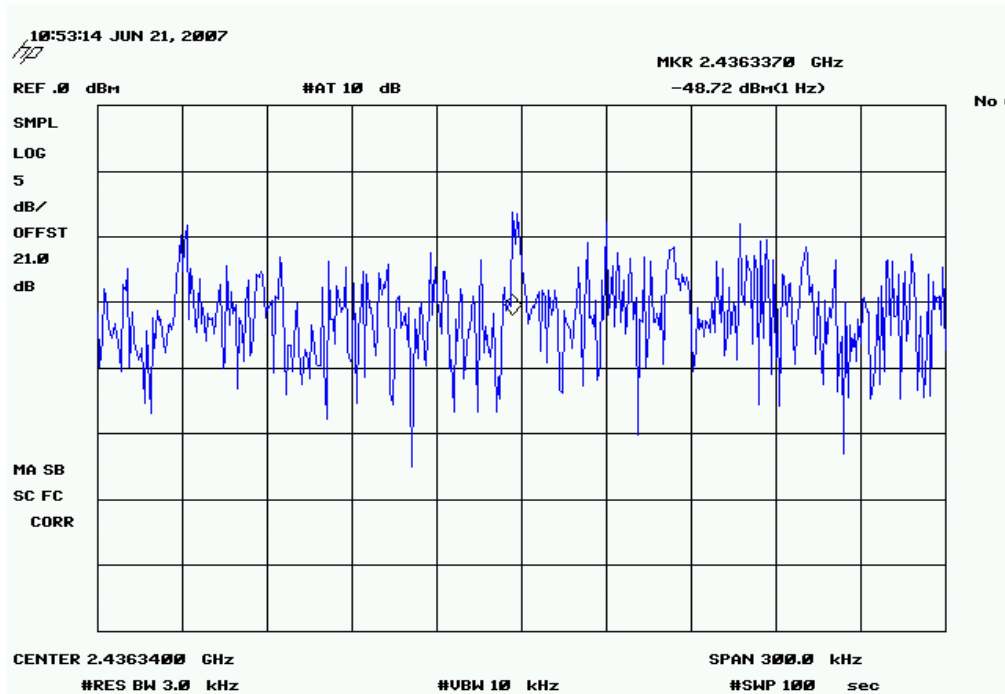


802.11(b) 1 Mbps, Mid Channel
Result: Pass **Value:** -16.05 dBm / 3 kHz **Limit:** 8 dBm / 3kHz

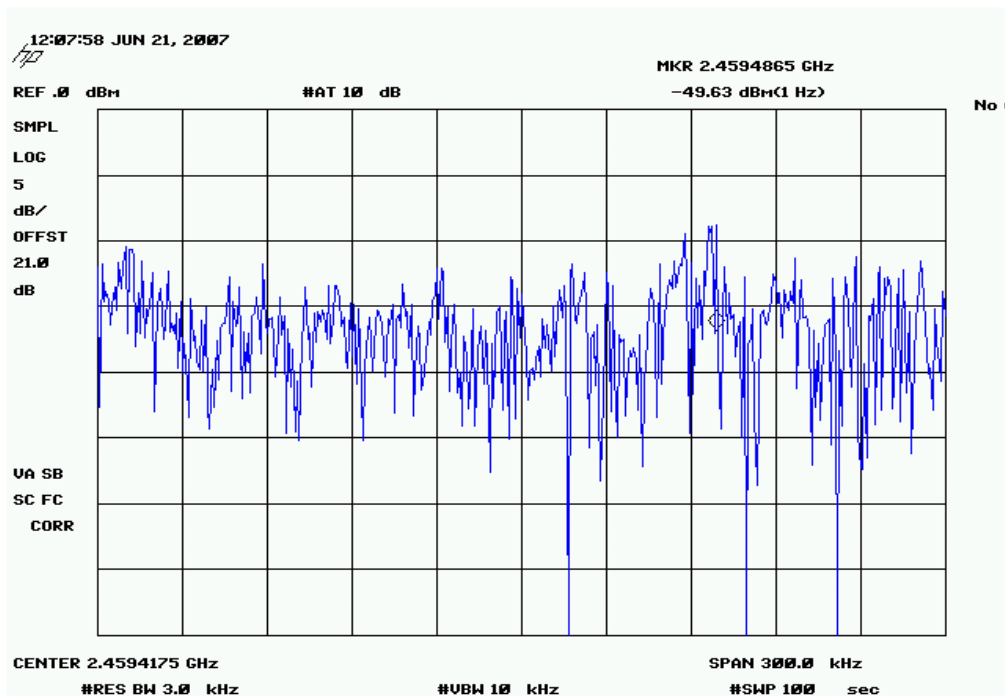


POWER SPECTRAL DENSITY

802.11(b) 11 Mbps, Mid Channel
Result: Pass **Value:** -13.92 dBm / 3 kHz **Limit:** 8 dBm / 3kHz

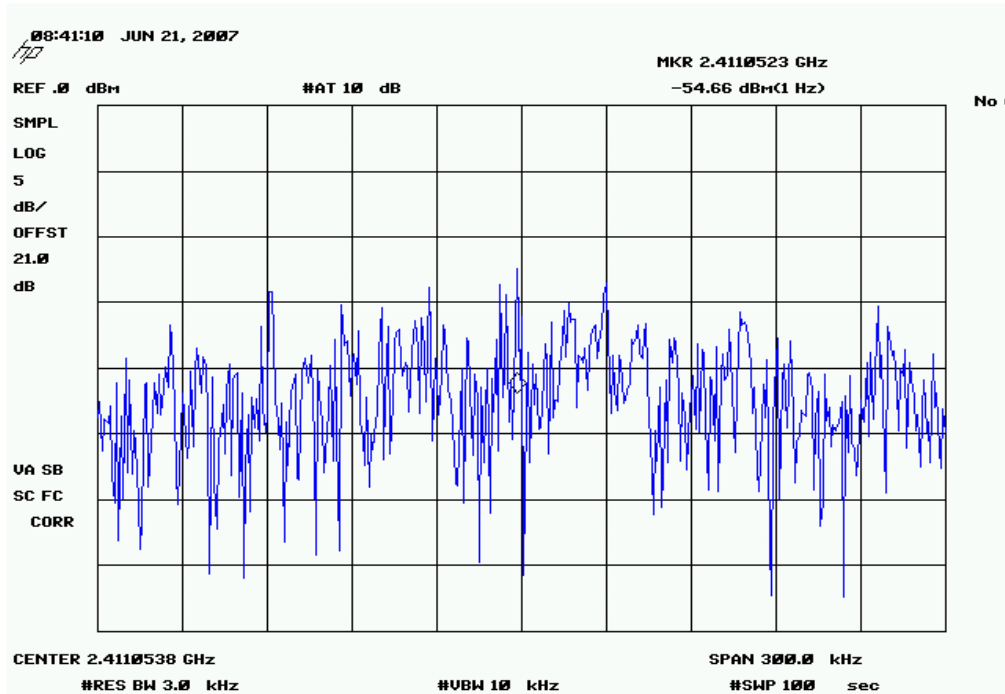


802.11(b) 11 Mbps, High Channel
Result: Pass **Value:** -14.38 dBm / 3 kHz **Limit:** 8 dBm / 3kHz

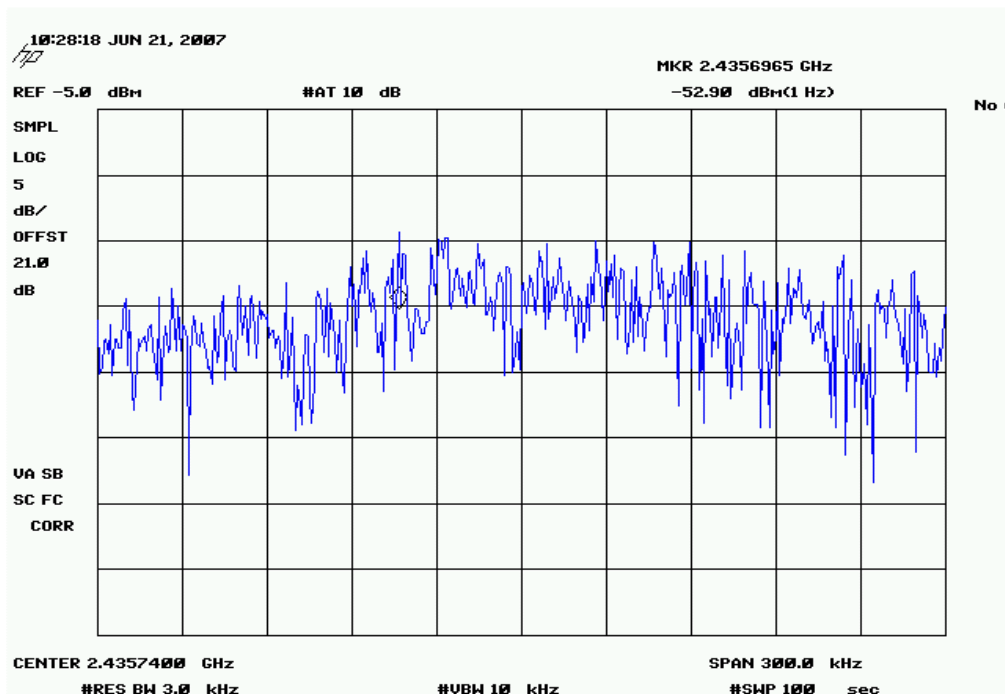


POWER SPECTRAL DENSITY

802.11(g) 6 Mbps, Low Channel
Result: Pass **Value:** -19.86 dBm / 3 kHz **Limit:** 8 dBm / 3kHz

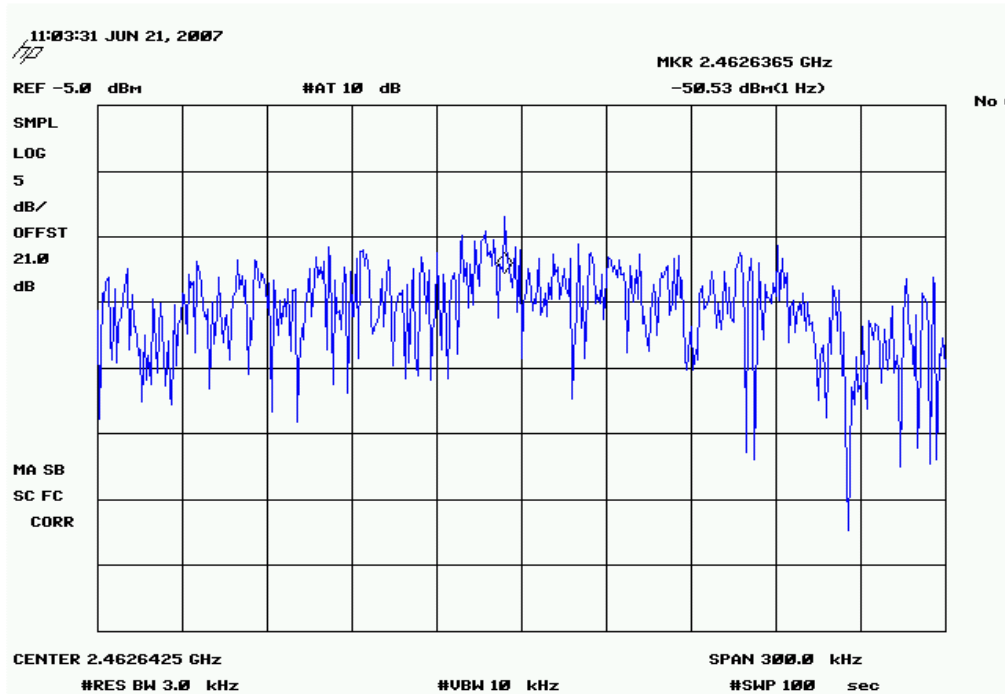


802.11(g) 6 Mbps, Mid Channel
Result: Pass **Value:** -18.10 dBm / 3 kHz **Limit:** 8 dBm / 3kHz

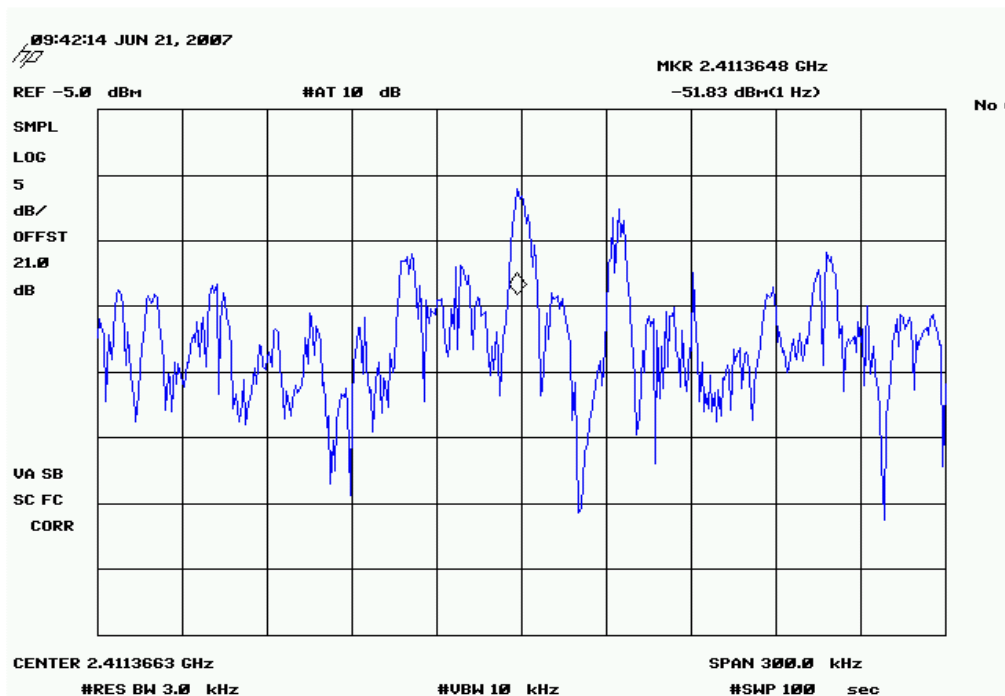


POWER SPECTRAL DENSITY

802.11(g) 6 Mbps, High Channel
Result: Pass **Value:** -15.73 dBm / 3 kHz **Limit:** 8 dBm / 3kHz

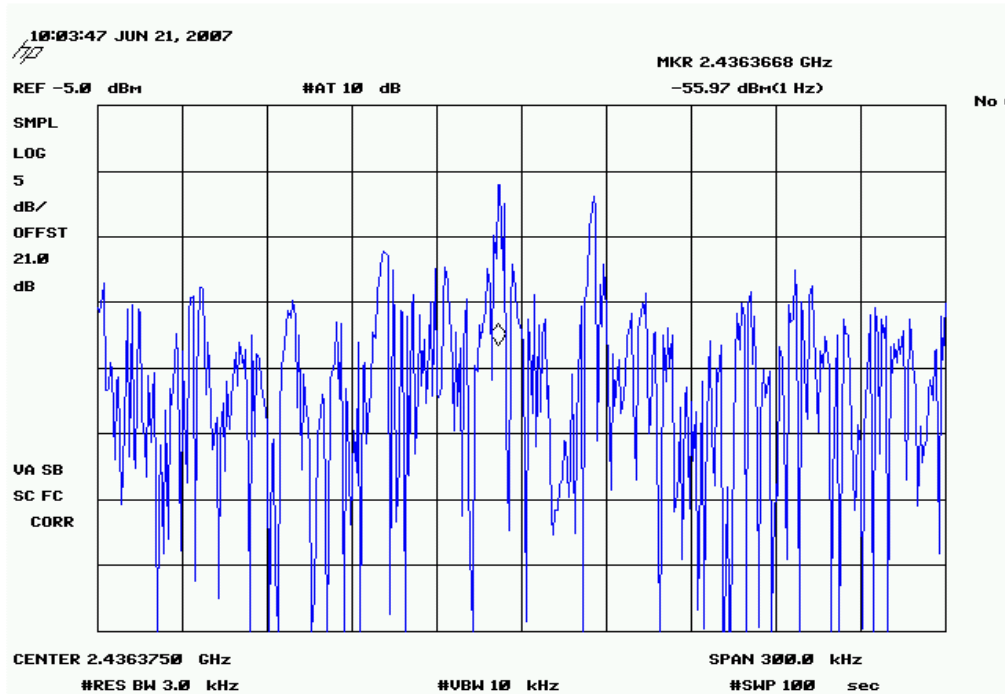


802.11(g) 36 Mbps, Low Channel
Result: Pass **Value:** -17.03 dBm / 3 kHz **Limit:** 8 dBm / 3kHz

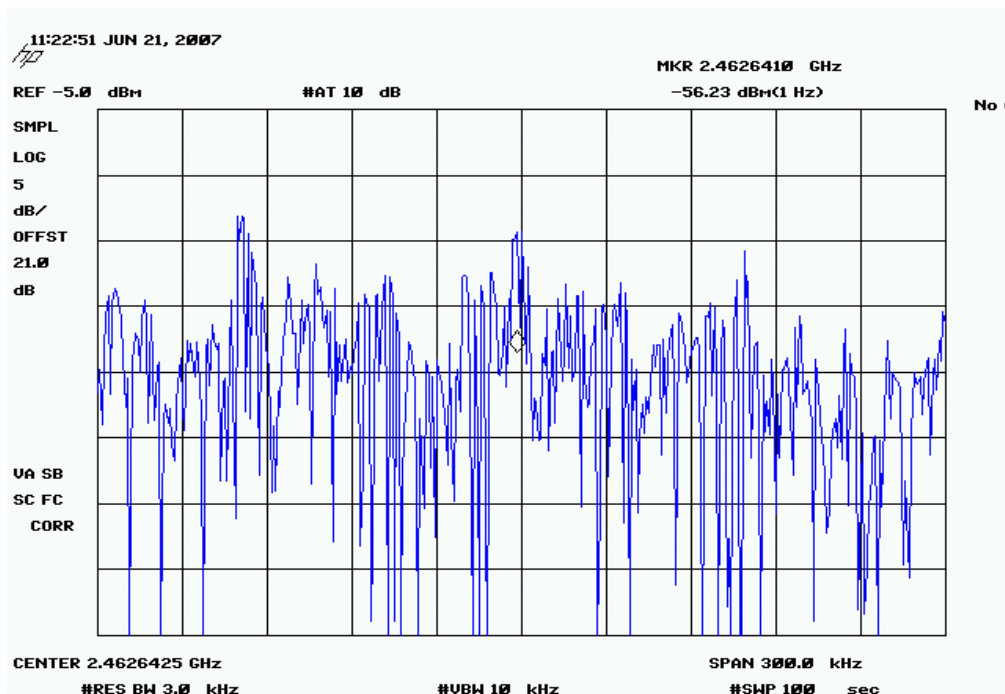


POWER SPECTRAL DENSITY

802.11(g) 36 Mbps, Mid Channel
Result: Pass **Value:** -21.17 dBm / 3 kHz **Limit:** 8 dBm / 3kHz

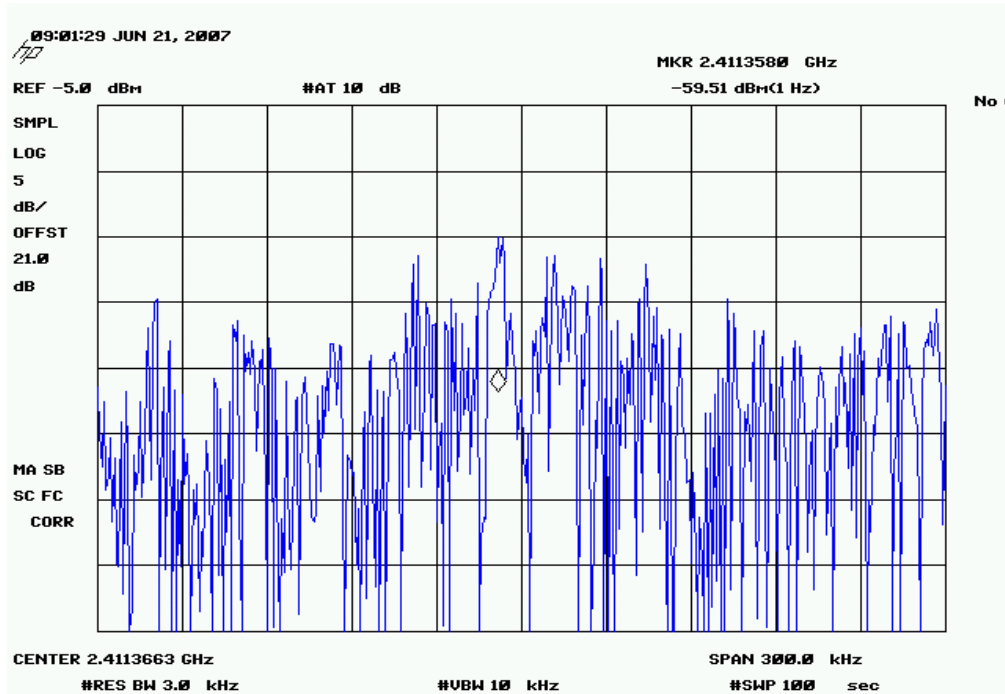


802.11(g) 36 Mbps, High Channel
Result: Pass **Value:** -21.43 dBm / 3 kHz **Limit:** 8 dBm / 3kHz

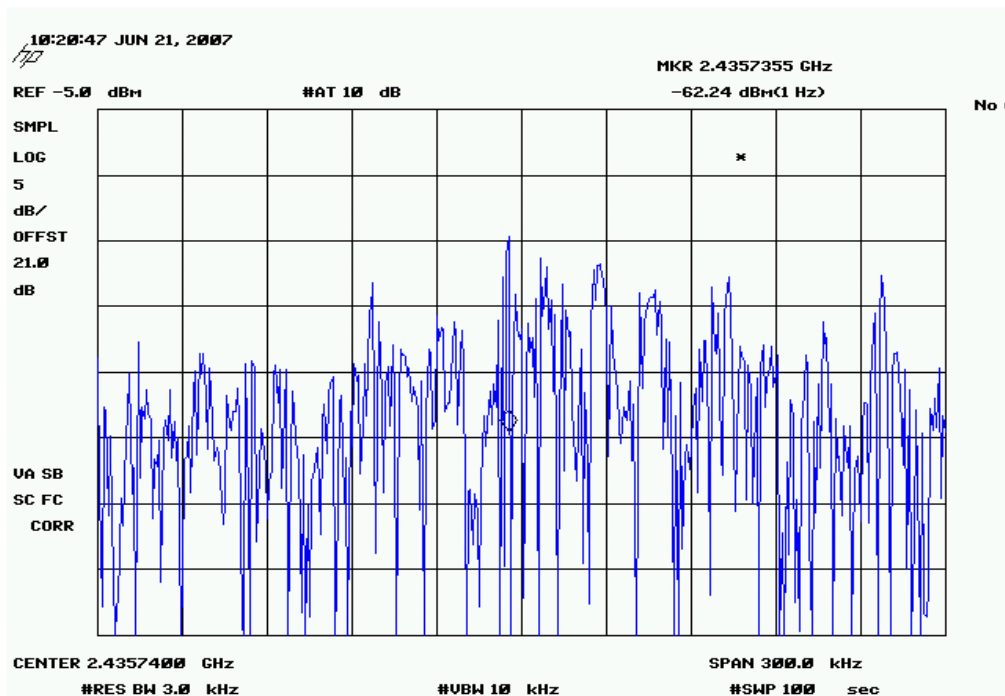


POWER SPECTRAL DENSITY

802.11(g) 54 Mbps, Low Channel
Result: Pass **Value:** -24.71 dBm / 3 kHz **Limit:** 8 dBm / 3kHz



802.11(g) 54 Mbps, Mid Channel
Result: Pass **Value:** -27.44 dBm / 3 kHz **Limit:** 8 dBm / 3kHz



POWER SPECTRAL DENSITY

802.11(g) 54 Mbps, High Channel

Result: Pass

Value: -24.12 dBm / 3 kHz

Limit: 8 dBm / 3kHz

